The Orchadian

Volume 18, Number 8 www.anos.org.au June 2016

Official Journal of the Australasian Native Orchid Society Inc.

Caladenia luteola from Western Australa Photo by Andrew Brown

Royal Botanic Gardens
Melbourne
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The Orchadian

Official Journal of the Australasian Native Orchid Society Inc. Founded 1963
www.anos.org.au
Dedicated to the study and conservation of Australasian native orchids
Print Post Approved: 100000950, ISSN 04774-3342
Patron: David Cannon
June 2016 Volume 18 Number 8

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Melbourne
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Items for consideration for publication should be submitted on disk or via e-mail to the editor, formatted for MS Word (.DOC, .DOCX, RTF). Images must be provided as separate files.

Please include your contact information for communication and publication.

Editorial Guidelines, including instructions for authors, are available on the ANOS website.

The Orchadian is printed by Immij Pty Ltd,
Mount Waverley Victoria 3149

Subscription Rates (in $AU)

Australia	$50
Asia/Pacific	$60
Rest of World	$70

Advertising Costs per Four Issues, June - March

1/6 page	$120
1/4 page	$160
1/2 page	$300

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or via **www.anos.org.au**

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Weekend	Monday	Tuesday	Wednesday	Thursday	Friday
1st Week		Townsville		Beenleigh	Toowoomba Victoria
2nd Week	Western Australia	Illawarra Kabi	Central Coast Geelong	Mackay & District	
Far North Coast (3rd Saturday)	3rd Week	Warringah		Macarthur & District	Sydney
Mid-North Coast (3rd Sunday)	4th Week	South Australia	Melbourne - Suburbs	Newcastle	

ANOS Products for sale

Products available to purchase include ANOS awards CDs. Details are available to view on the website.

Contact the treasurer with regard to availability and to arrange payment.

ANOS Inc. Membership

Personal membership is achieved by a subscription to *The Orchadian.*

Members receive four issues a year and have full voting rights at the AGM which will be held at the 2016 conference at Kempsey.

Corrigenda Vol. 18 No.7 March 2016

p. 309 *Dendrobium speciosum* var. *hillii*, *Dipodium*; p. 310 *D. speciosum* var. *curvicaule* 'Daylight Moon', *D. speciosum* var. *curvicaule* 'Misty Mountain'; p. 316 *D. bowmanii*, correct name for *Oberonia muelleri* is *O. complanata*, correct name for *Geodorum pictum* is *G. densiflorum*; p. 328 correct spelling is *Sarcochilus*; p. 342 correct spelling is Cedarvale.

The production process of *The Orchadian* is in revision and offers of assistance to the volunteer group from experienced proof readers are welcome.

Editorial

Peter Adams

Take an armchair journey from almost one end of the east coast of Australia to the other. Forty Mile Scrub is an isolated patch of dry rainforest in northern Queensland, and Noel Grundon and his co-writers have written an account of the orchids of this National Park. It may inspire you to put it on the itinerary when travelling to the much wetter Atherton Tableland.

Tasmania is an exciting place for wild orchids, and there are plenty of Australian orchid enthusiasts there. The island has over 200 orchid species, all terrestrial apart from two - *Dendrobium striolatum* occurs on the east coast and *Sarcochilus australis* has a more extensive scattered distribution. Geoff Curry from Threatened Plants Tasmania gives us a snapshot of threatened and endangered species, local conservation activities, and the effects of drought and a hot summer on orchid populations. *Prasophyllum milfordense* and *Caladenia saggicola* are only found at one location near Hobart. They are protected under the *Threatened Species Protection Act 1995*. Darryl Corbett will surprise some readers with his description of growing Australian and exotic orchids outside in his native garden on the northern coast of Tasmania.

There is a wealth of history and unsurpassed illustration in the excitement of the original descriptions, classification and illustration of Australian orchids in the plant periodicals of the 19th Century. As species arrived in Europe, organisation into a new system of classification changed rapidly as a necessity with the expansion of knowledge, and this continues at a slower rate today. Of all the periodicals presenting new discoveries, *Curtis's Botanical Magazine* is the greatest, the largest publication of its kind, and still in publication today.

The early collections from the colony, for example *Dendrobium speciosum* from Port Jackson, Sydney, were often poorly documented, with the location and collectors not recorded or subsequently identified. In the second and third decade of the century, Allan Cunningham (1791-1839), had the specific task of documenting and collecting; and sent back seeds, dried specimens and living plants to be grown in England and Europe. He was an early conservationist, and as early as 1825 was alarmed at the expansion of Sydney and loss of orchid habitat. Cunningham is one of Australia's greatest and relatively unacknowledged botanists and explorers, and he recorded dates, provenance and particulars of orchid species in meticulous diaries, letters and journals that were part of his contract. Some of these have been gathered together and published e.g. *Allan Cunningham: Letters of a Botanist/ Explorer, 1791-1839,* self published by A.E. Orchard and T.A. Orchard in 2015.

Malcolm McGowan and I analyse a recent consignment of 7 prints, including 5 terrestrials, 4 of which flowered in London in the 1830s from a collection of tubers sent by Allan Cunningham. Looking at orchid events in the first half of the 19th century reveals that Australian species were widely grown in England and Europe, with the largest and showiest highly regarded and costly, and the smaller ones often seen as of little interest.

Graham Corbin reports some puzzling observations on *Thelymitra* from south east Queensland, and the 2015 Ira Butler awards are illustrated with comments. The forthcoming Kempsey Speciosum Spectacular and 8th ANOS Conference are highlighted. David Butler offers some valuable cultural advice from himself and other experienced growers.

I attended the Asia Pacific Orchid Conference (APOC) and Show in March in Bangkok, Thailand, which is held every three years. Much of the country was in the grip of a drought with peak flowering reduced. The next APOC is in Kuching, Sarawak in December 2019. I presented an Invited Paper on *Dendrobium bigibbum* research and implications for the international horticultural industry, and chaired a session for young professional scientists conducting research that assists cut flower and pot plant production. Thailand produces more than 80% of the world exports of *Dendrobium*, most of it based on Queensland's floral emblem, *D. bigibbum*, while Australia has invested little in this prosperous industry.

President's Report

John Zietsch reports that all is progressing well with planning for the 8th ANOS Conference in Kempsey. Volunteers are needed at the event - if anyone is able to assist even for an hour contact John on 04 0803 4633. Now is also the time for groups to consider hosting the next triennial ANOS Conference. If groups or individuals are interested, John Zietsch is happy to answer questions and give advice.

The Annual General Meeting will be held during this event on Friday 2nd September, at 2 pm in the hospitality marquee. This will be followed by a meeting of the new ANOS Council with delegates invited from all ANOS groups. I appeal to all groups to appoint a delegate to attend this meeting which will largely be devoted to advice from the groups, new ideas, general discussion and future directions for ANOS Inc.

The ANOS website is available for all groups to display information about themselves. It is important that information is regularly updated and it is the responsibility of groups to do so. This also applies to group details in *The Orchadian*. ANOS Council has had a couple of inquiries from members of the public that have attempted to access their local groups, where group contact details haven't been updated.

I was privileged to recently attend the ANOS Newcastle Group Autumn show, which has been running for many years now and is a great showcase for *Dendrobium bigibbum* and its hybrids. This beautiful species is not often seen at ANOS shows because of its flowering time. I would like to see the Sydney groups take turns at hosting a *Dendrobium bigibbum* (or autumn) show. I know of orchid societies having an annual Orchid Challenge where individual groups take turns at hosting with great success. *Dendrobium bigibbum* should not need any promotion as it is a beautiful orchid. People are deterred from growing it as the misconception is that it requires a glasshouse. The Grand Champion at the Newcastle ANOS Autumn show was *D. bigibbum* var. *superbum* 'Maya's Choice' (see article in this issue), a magnificent, floriferous orchid owned by John Larkey who DOES NOT have a glasshouse and grows his plants in a back porch area that has a polycarbonate roof without sides.

I attended the Asia Pacific Orchid Conference in Bangkok in March. Thai orchid nurseries have been using *D. bigibbum* in hybridising for many years, and in fact there was a section winner that had *D. bigibbum* as a parent.

Hope you are all enjoying your Australian native orchids as much as I am.

Tony Clarke

Notice Of Annual General Meeting

The Annual General Meeting of ANOS Inc. will be held during the 8th ANOS Conference at the Hospitality tent, Kempsey Dirt Bike Track, Kempsey, New South Wales, on Friday 2nd September at 2 pm. All ANOS council positions will be declared vacant and an election will be held. For nomination and proxy forms please contact the secretary Rick Winch by email rickwinch@westnet.com.au or phone 04 3952 2236.

All ANOS groups are invited to send a representative to meet with the new Council immediately following the AGM to discuss items of mutual interest.

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Orchids of Forty Mile Scrub National Park

Noel J Grundon, Mark Nowochatko and Bruce Gray
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One of the great thrills of spending time in nature is discovery. There is always something new to behold – a new ecosystem, a new plant, or a new danger to the ecosystem. A visit to Forty Mile Scrub National Park offers all these and sometimes more, especially for visitors wishing to see an inland dry rainforest ecosystem and the orchid species that inhabit it.

Location and History

At latitude 18.1°S and longitude 144.9°E, Forty Mile Scrub is located about 220 km by road south-west of Cairns, and around 130 km west of Cardwell (latitude 18.5°S; longitude 146.0°E). With about 6,330 hectares, Forty Mile Scrub National Park is one of Queensland's smaller national parks. It was gazetted in a number of stages from June 1970 to November 1997 by combining portions from the surrounding cattle stations of St. Ronans Holding, Mount Laing North Holding, and Minnamoolka Holdings (Queensland Parks and Wildlife Service 2000).

The region has been used predominantly for cattle grazing since European settlement in the early 1860s. Forty Mile Scrub derives its name from the journeys of the pioneering graziers; it is 40 miles from Mount Garnet, the nearest post office and supply centre.

Today, the park protects inland dry rainforest remnants of vine-thicket surrounded by open grassy woodland at the headwaters of Lynd, Barwon and Cleanskin Creeks. It has day-use facilities of road-side picnic tables, shelters and toilets that provide a welcome stop for travellers from coastal Far North Queensland south-west through Mount Garnet towards Charters Towers on the Kennedy Highway. Just to the south of Forty Mile Scrub, the Gulf Development Road begins and takes travellers west through Mt. Surprise to Normanton on the Gulf of Carpentaria.

At the rest area of the park, visitor enjoyment is enhanced by provision of interpretative signage of the geology and vegetation of the area, and a 300 m graded, wheelchair-accessible, self-guided circuit walking track through the vine-thicket.

Vegetation

Rainforest is the ultimate charismatic habitat. The vine-thickets of inland dry rainforests such as Forty Mile Scrub have a serious image problem; they lack many of the iconic elements of the wet coastal and mountain rainforests – there are no fern trees, no palms, no towering trees with buttressed roots, and no abundance of epiphytes and orchids. And the thicket shrubs are often prickly.

The two main vegetation types in the park are: (1) open grassy eucalypt woodland containing eucalypts such as iron bark and bloodwood trees; and (2) 'islands' of semi-evergreen vine-thicket with emergent trees of broad-leaved bottle trees (*Brachychiton australis*), Burdekin Plum (*Pleiogynium timorense*), white cedar (*Melia azedarach*), and figs (*Ficus rubiginosa* and *Ficus opposita*). Queensland Parks and Wildlife Service lists eight orchids in the vegetation of the park: *Dendrobium linguiforme* var. *nugentii* F.M. Bailey (syn. *Dendrobium nugentii* (F.M. Bailey) D.L. Jones & M.A. Clem.); *Dendrobium mortii* F. Muell.; *Dendrobium bowmanii* Benth.; *Dendrobium monophyllum* F. Muell.; *Cymbidium canaliculatum* R. Br.; *Sarcochilus minutiflos* F.M. Bailey; *Saccolabiopsis armitii* (F. Muell.) Dockrill; and *Habenaria hymenophylla* Schltr.

After many trips around the walking track at the rest area and roaming throughout the park during different months of the year, we believe the list of orchids is incorrect. We have never sighted *Dendrobium mortii* in flower and believe it may have been confused with *Dendrobium bowmanii* if the list was prepared when both species were vegetative and not in flower. Further, we believe the correct name of the *Sarcochilus* species is probably *Sarcochilus tricalliatus* rather than *Sarcochilus minutiflos*.

Cymbidium canaliculatum R. Br.

This is one of the most widely distributed Australian orchids, having been recorded across the top of tropical Australia and down the eastern Queensland coast into northern New South Wales. In eastern Queensland and NSW, it is found in drier coastal areas, but is more common as an inland species rather than a coastal one.

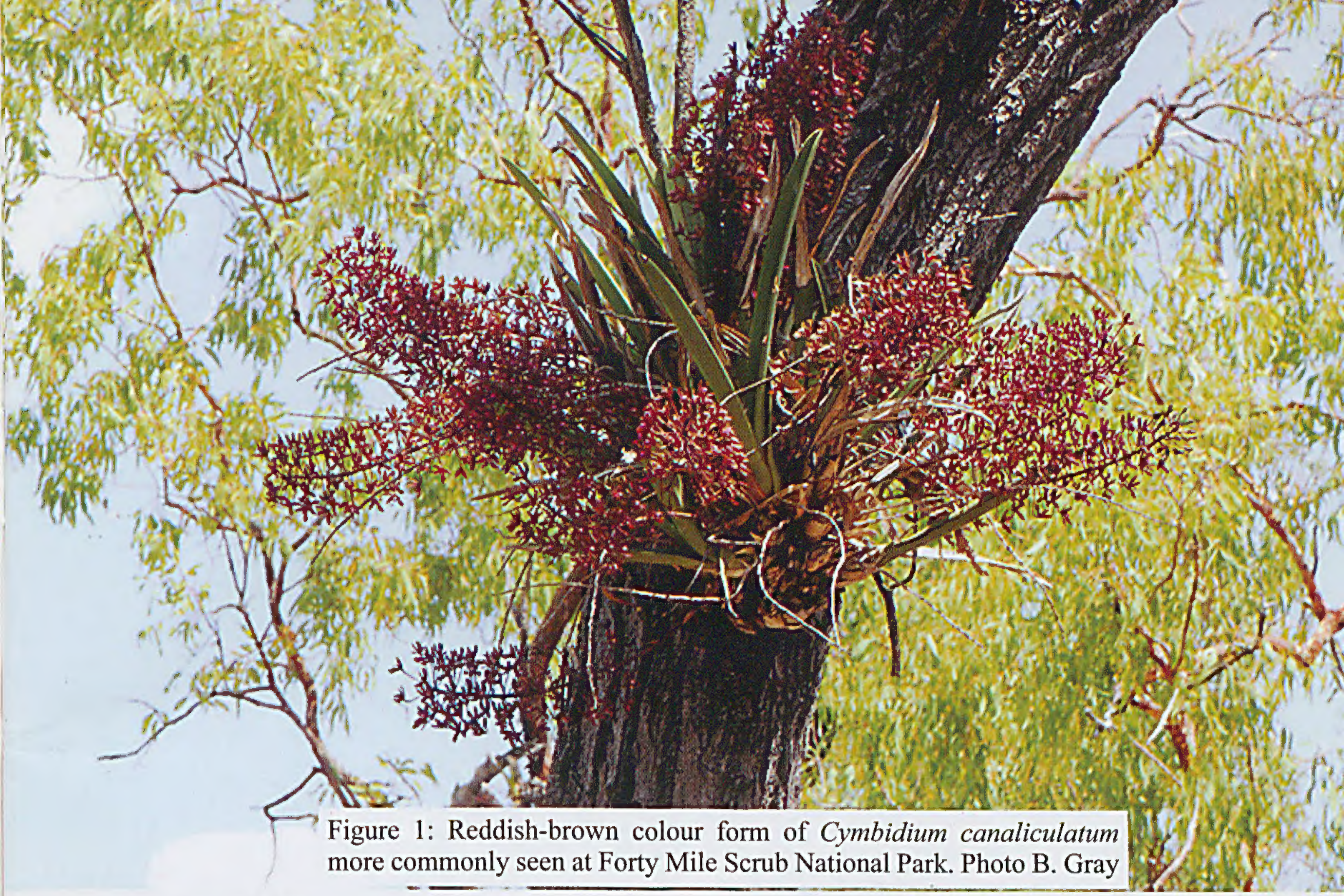

Figure 1: Reddish-brown colour form of *Cymbidium canaliculatum* more commonly seen at Forty Mile Scrub National Park. Photo B. Gray

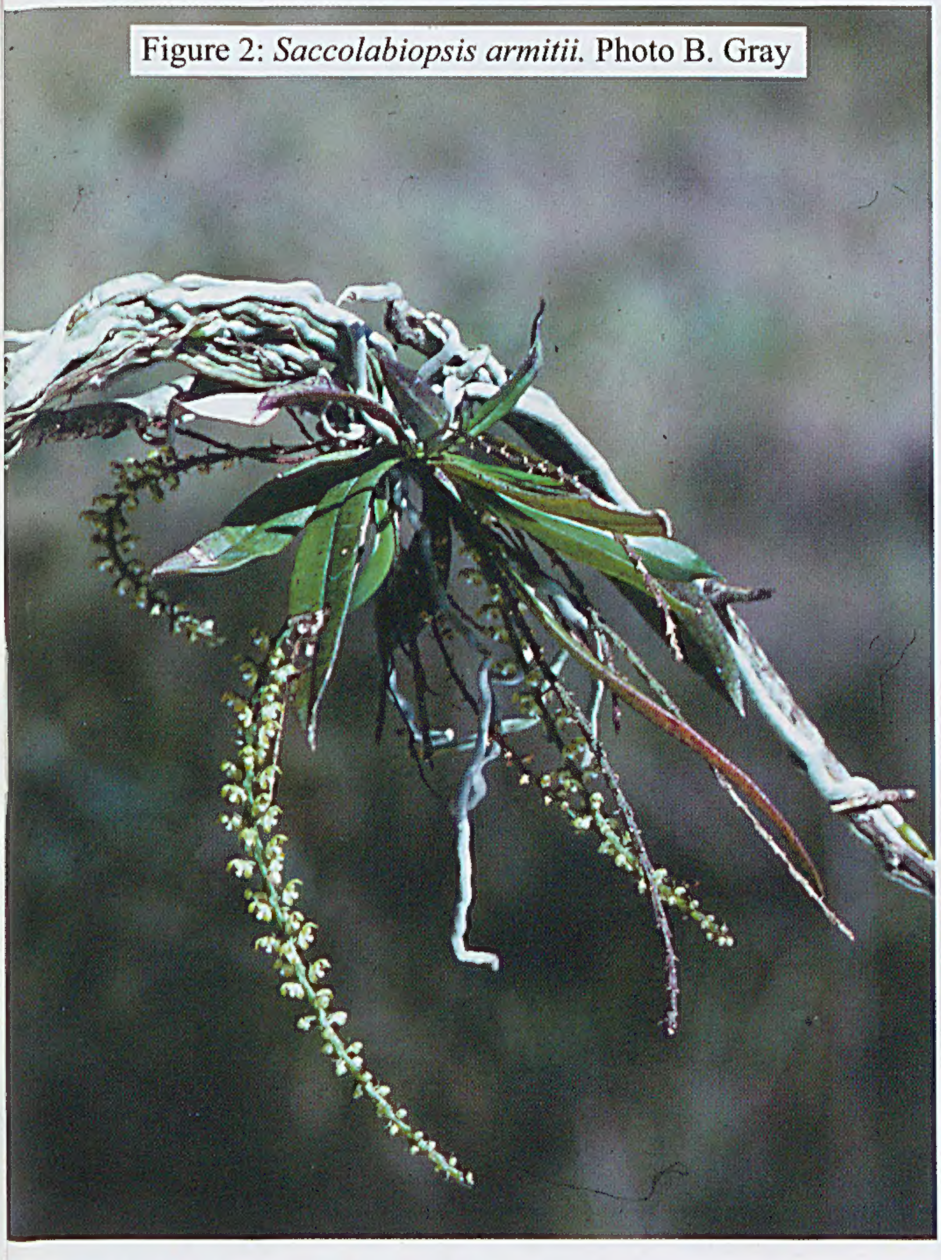

Figure 2: *Saccolabiopsis armitii.* Photo B. Gray

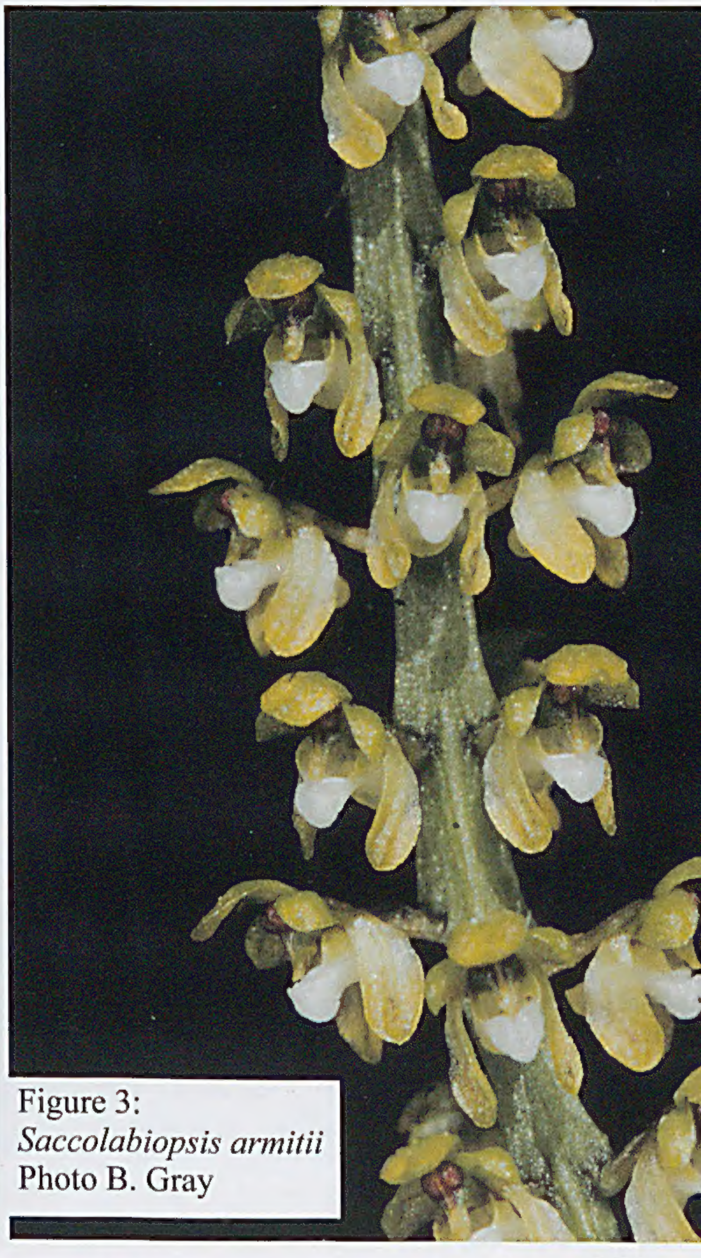

Figure 3: *Saccolabiopsis armitii* Photo B. Gray

At Forty Mile Scrub the dense clumps of stout pseudobulbs with deeply channelled leaves characteristic of *Cymbidium canaliculatum* are found protruding from broken branches of the iron bark and other eucalypts of the open savannah woodland that surrounds the 'islands' of vine-thickets. Throughout its range, this species has a number of colour forms, ranging from very dark purple-black to dark brown con-colours, through to mottled grey overlaying a brown or cream base. An alba form with overall-green segments and a white labellum is also known. At Forty Mile Scrub, the usual colour forms are reddish-brown (Figure 1), sometimes with grey mottling. Flowering is in late spring.

Dendrobium linguiforme var. *nugentii* F.M. Bailey

Named *Dendrobium linguiforme* var. *nugentii* by F.M. Bailey in 1894, it was proposed as *D. nugentii* by David Jones and Mark Clements (Clements 1989 p. 58). It is distinguished from *D. linguiforme* var. *linguiforme* by having somewhat broader, more rounded leaves that have a rough, sand paper feel, and flowers that are somewhat smaller with more rounded segments and pale cream colour that quickly turns yellow as they age. It occurs widely throughout the vine-thickets, and can be readily seen from the walking track at the rest area growing on trunks and larger branches in sheltered areas on smaller trees, and in quite exposed locations on the emergent trees. Unlike the extensive mats of the creeping rhizomes often seen in its more wet coastal and mountain habitats, at Forty Mile Scrub the plants are less extensive, often being only a single rhizome or with one to three branches and carrying 10 to 30 deeply furrowed, dark green leaves. Locally, it has the common name of thumb orchid. Flowering is in spring.

Dendrobium bowmanii Benth.

This species of pencil orchid occurs on trunks and branches of trees and shrubs in the vine-thickets, and can be easily seen, often at eye-level, from the walking track at the rest area of the park. Plants are generally more slender, less branched, and less extensive than those seen in its wetter mountain and coastal habits. When not in flower, or as young plants, they are hard to distinguish from *Dendrobium mortii*, which may account for the latter species being listed in the vegetation of the park by QPWS. Mature plants are up to 30 cm long, and have a straggly appearance. From one to three yellowish-green flowers up to 25mm wide with a white labellum are borne from the rhizome near the youngest leaves. Flowering occurs spasmodically throughout the year but is more common in autumn and spring, often with all plants in the same location opening their flowers within one or two days of each other.

Dendrobium monophyllum F. Muell.

This epiphytic orchid bears the common name of lily of the valley orchid. At Forty Mile Scrub, it commonly occurs in quite exposed positions high in the branches and trunks on emergent trees in the vine-thickets, especially on bottle trees on the eastern edge of the rest area of the park. The form at Forty Mile Scrub does not differ from that seen elsewhere throughout its habitat from Cooktown to Grafton, although the extent of the creeping mat of rhizomes is usually less extensive than in the wetter parts of its range. This species forms mats of creeping rhizomes carrying short, usually vertical, conical pseudobulbs with a single leaf. A single raceme is produced in spring from the apex of the pseudobulb carrying 10 to 30 yellow, perfumed, bell-shaped flowers.

Saccolabiopsis armitii (F. Muell.) Dockrill

Saccolabiopsis armitii is a vandaceous Aeridinae species found mainly as a twig epiphyte, and occasionally on small branches of shrubs and smaller trees within the vine-thickets (Figure 2). It is readily visible at eye-level from the walking track at the rest area of the park. Adams (2016) has provided a comprehensive description of *Saccolabiopsis armitii* and its distribution. Plants at Forty Mile Scrub have a more yellow-green colour and are more cup-shaped (Figure 3) than those shown by Adams.

Sarcochilus tricalliatus (Rupp) Rupp

Queensland Parks and Wildlife Service lists *S. minutiflos* F.M. Bailey as the small, slender *Sarcochilus* species at Forty Mile Scrub, but we believe that *S. tricalliatus* (Rupp) Rupp is best used. It is clearly a member of the three-species complex of *S. minutiflos*, *S. hillii*, and *S. tricalliatus*. At various times taxonomists have listed these as separate species, or as a variety or synonym of one of the others, and as occurring only north or only south of Rockhampton. Logan (2005) comprehensively summarised the

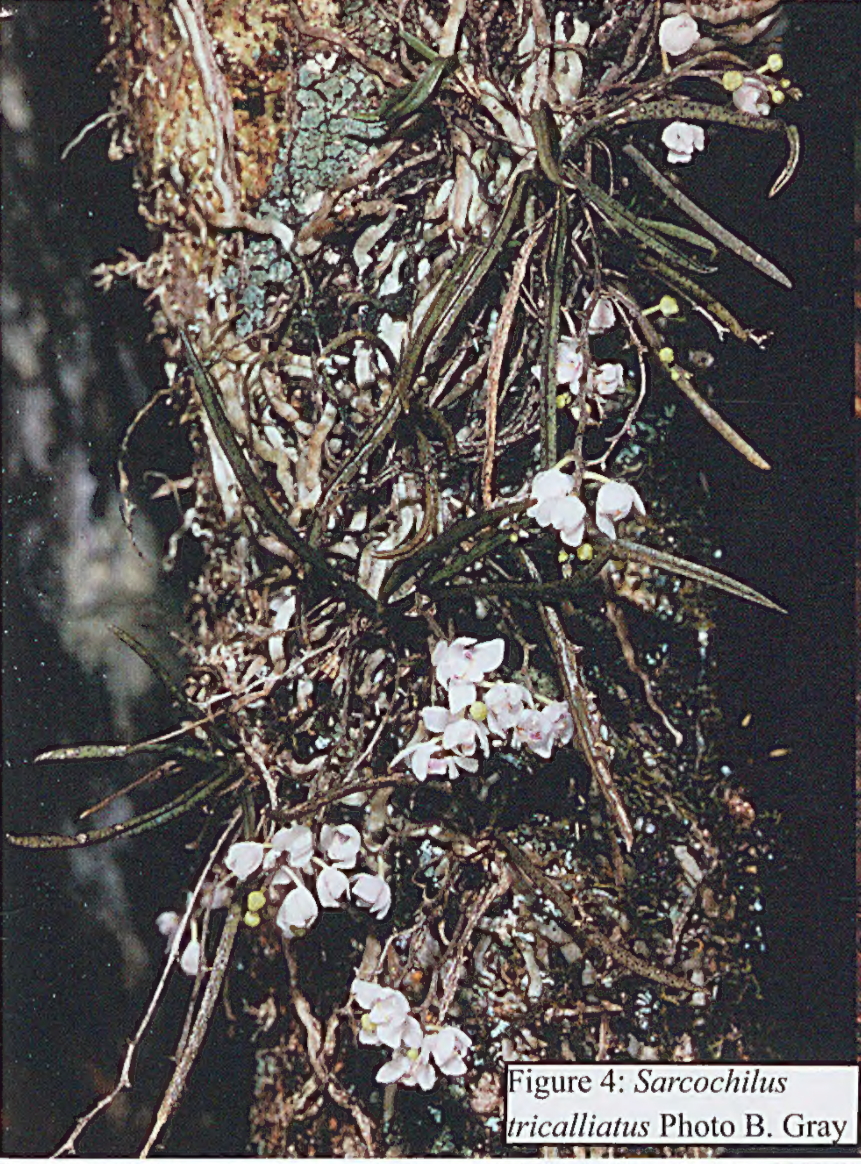

Figure 4: *Sarcochilus tricalliatus* Photo B. Gray

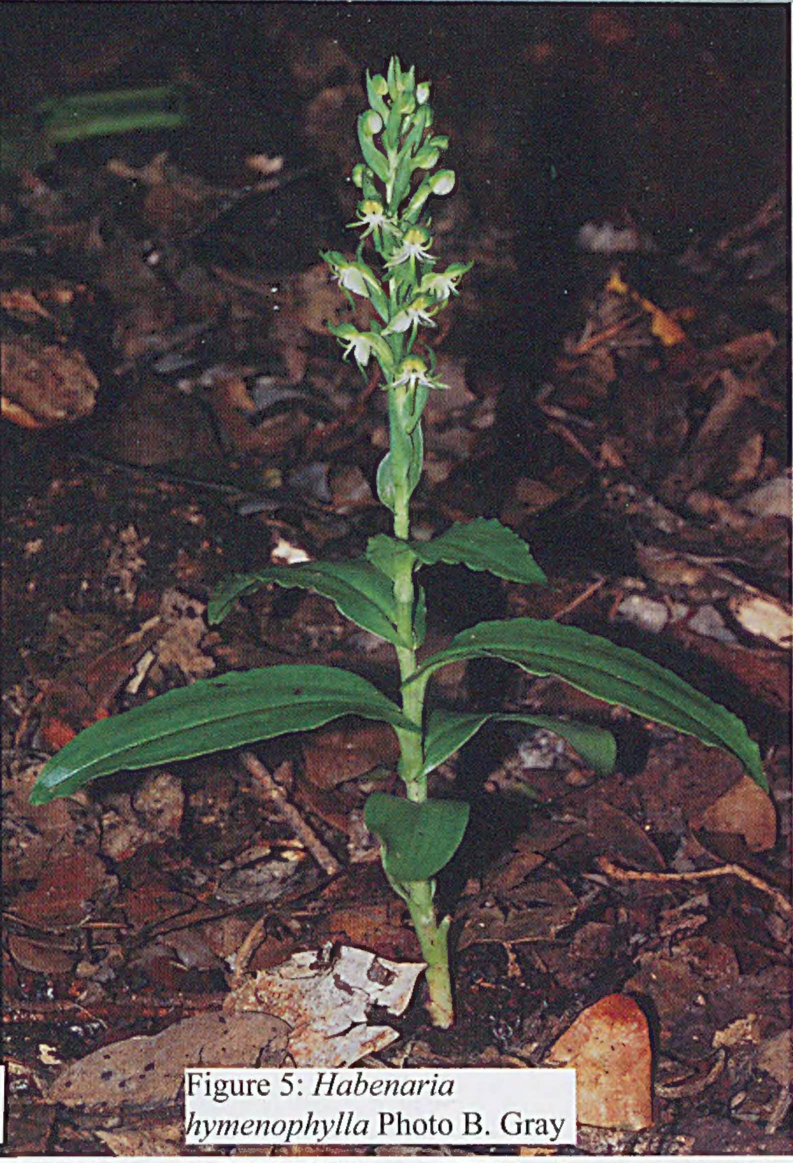

Figure 5: *Habenaria hymenophylla* Photo B. Gray

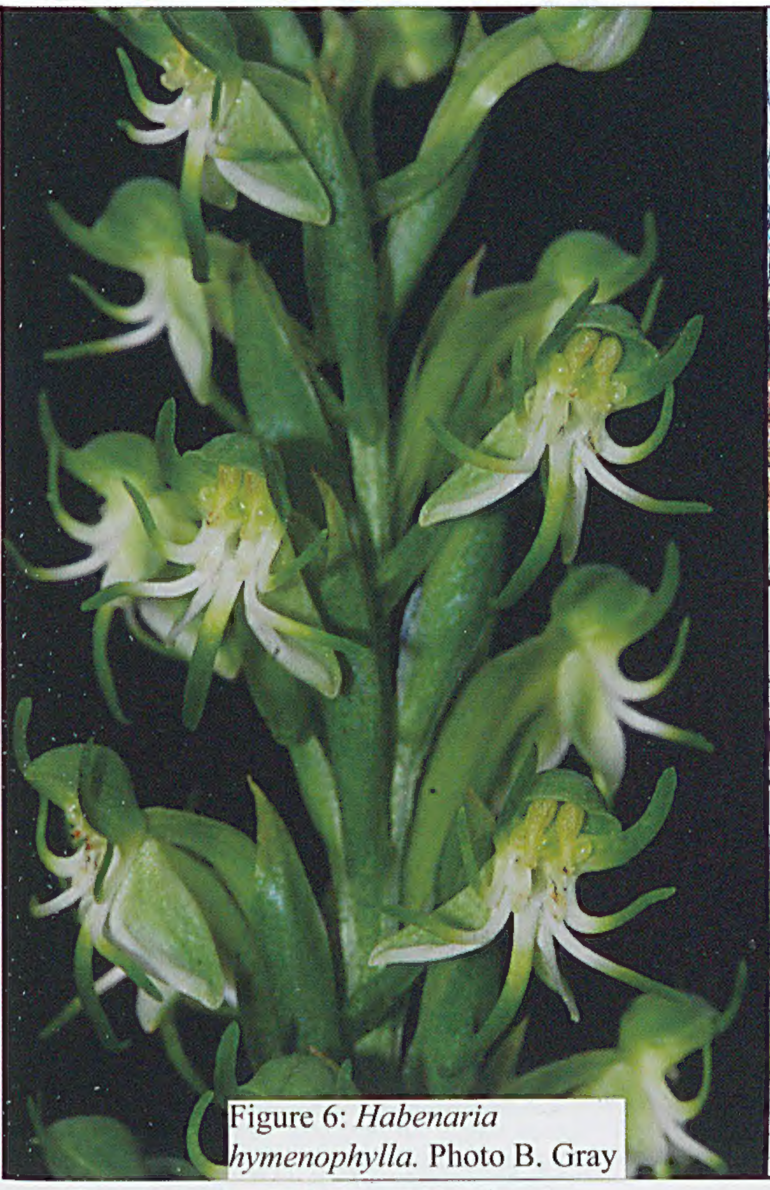

Figure 6: *Habenaria hymenophylla.* Photo B. Gray

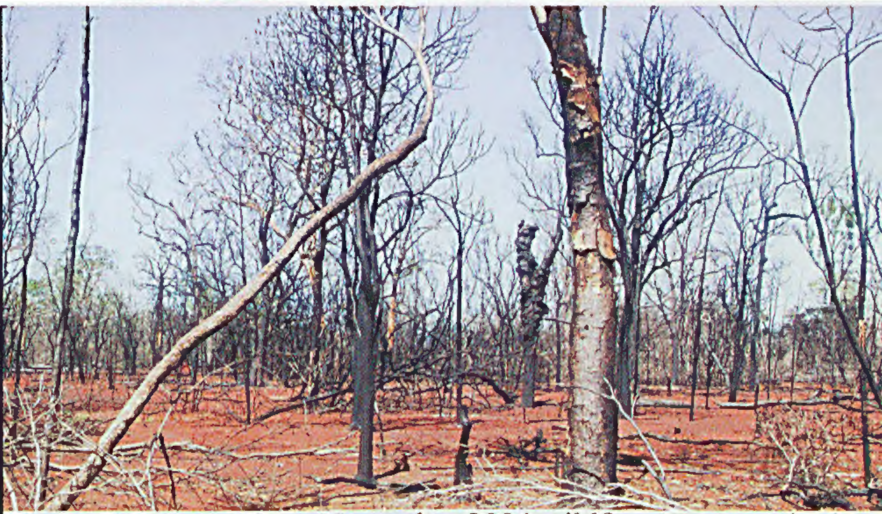

Figure 7: Damage from November 2004 wildfire. Note tree in the centre with the knobbed trunk January 2005. Photo G.Sankowsky

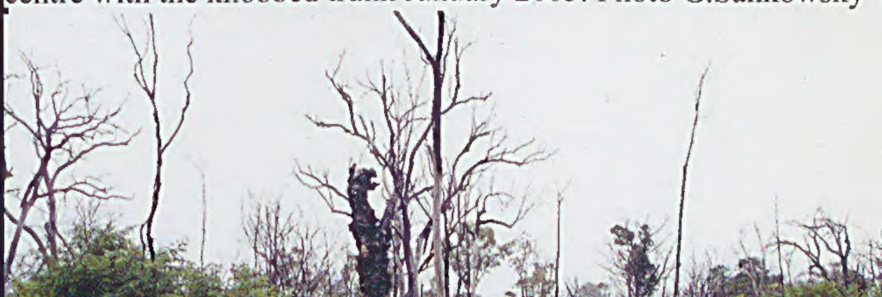

Figure 8: Recovery 27 months after the November 2004 wildfire. Note the tree with the knobbed trunk in the centre of photo with no *Lantana* nearby. February 2007. Photo G. Sankowsky

confused taxonomy of these three species, and concluded that *S. hilli* and *S. minutiflos* form a southern alliance, and *S. tricalliatus* is applied to northern plants. In the Key to Australian Tropical Rainforest Orchids, Jones et al. (2010) supports Logan's conclusion, stating that *S. tricalliatus* (Rupp) Rupp occurs from Cooktown to Rockhampton in drier stunted rainforests, whereas *S. minutiflos* F.M. Bailey is confined to south-central Queensland. The complex requires further study to clarify taxa.

Plants at Forty Mile Scrub are small, slender-leafed, with a somewhat drooping or pendulous habit, and are found growing on trunks and branches of small trees in the vine-thickets (Figure 4). Pale pink to white flowers are seen in spring. It is not a common orchid in the park, and is hard to find from the walking track at the rest area.

Habenaria hymenophylla Schltr.

Soon after the summer storms of November-December, a large-leafed terrestrial begins to appear in shaded, sheltered areas of the vine-thickets. Up to eight thin-textured leaves, to 6 cm long by 35 mm wide rapidly extend to form a loose rosette and an inflorescence up to 40 cm tall bearing 20 to 30 flowers by June/July (Figure 5). Flowers are greenish in colour with a white to pale green tri-lobed labellum appearing in January-February, and fruit by March (Figure 6). This species is not widely spread in the park, but a small colony can be found near the walking track at the rest area.

Lantana invasion and dangers from wildfires to the vegetation

Feral pigs, invasion by *Lantana camara*, and wildfires, cause substantial damage to the park and surrounding pastoral holdings. The Kennedy Highway passes through Forty Mile Scrub and fires are sometimes deliberately started from the road side. Such a wildfire, deliberately lit in November 2004, burnt out a small part of the park and parts of adjoining St Ronans Pastoral Holding (Mark Peacock, QPWS Park Manager 2005, personal comment). Figure 7, taken in February 2005, shows how devastating a fire can be to the vegetation that surrounds the somewhat fire resistant dry vine-thickets growing on volcanic outcrops at Forty Mile Scrub. Photos taken years later from the same spot (Figures 8, 9) show the regrowth of *Lantana* and grader grass within the

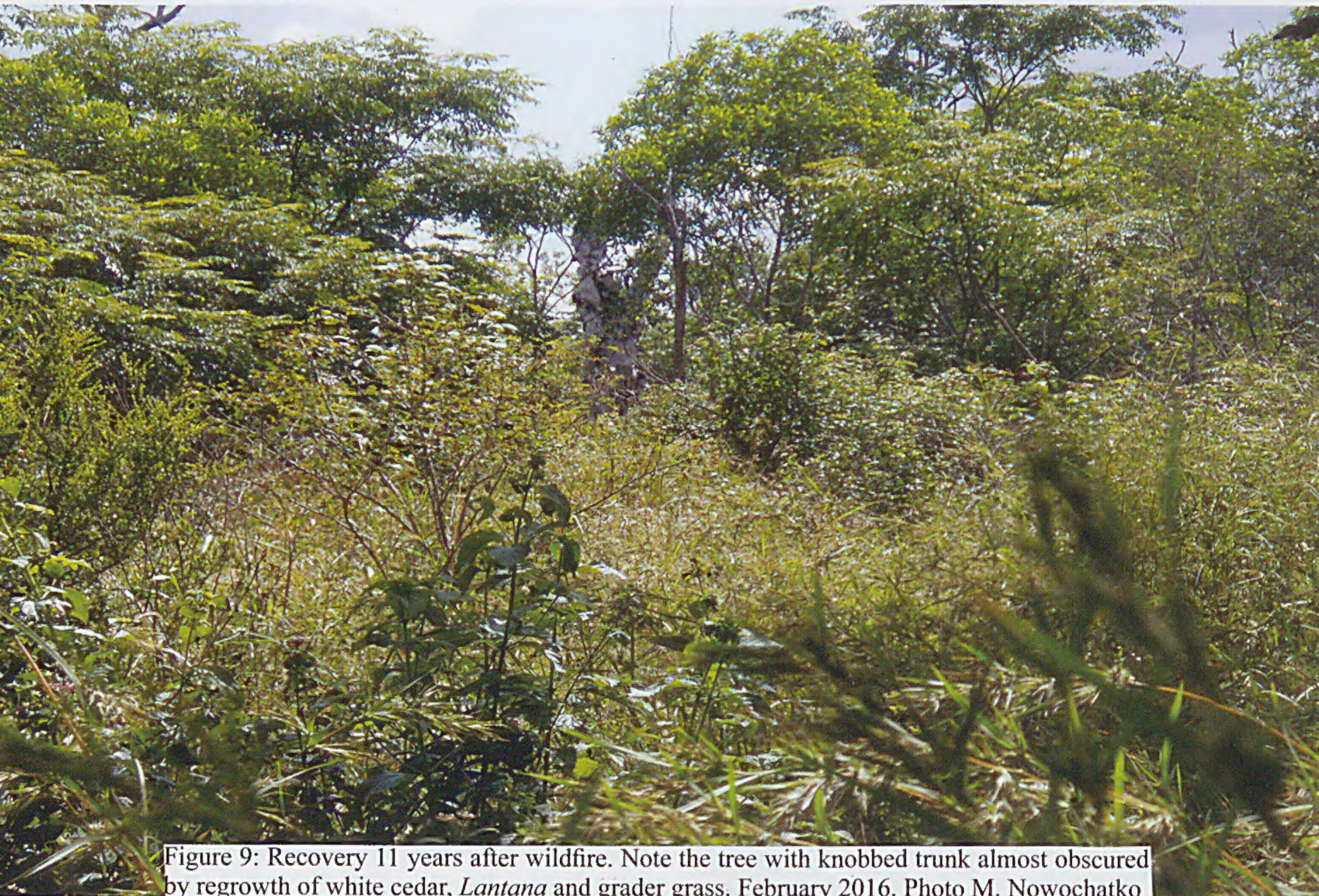

Figure 9: Recovery 11 years after wildfire. Note the tree with knobbed trunk almost obscured by regrowth of white cedar, *Lantana* and grader grass. February 2016. Photo M. Nowochatko

fire scar. This provides the fuel to feed a hot fire that the vegetation of the scrub is not adapted to survive. Unlike many patches of remnant vine-thicket that survive on outcrops of volcanic rock, Forty Mile Scrub has areas of good volcanic soil that provides a suitable host for weeds to thrive. The *Lantana* and other weeds displace the natural vegetation and build the fuel load, so that the next fire encroaches even further into the remnant vine-thicket.

Although thirty-one biological control agents for *Lantana* have been introduced to Australia, only seventeen have established enough to cause seasonal damage, reducing vigour and competitiveness. Whilst biological controls have been introduced to Forty Mile Scrub, their effect has been limited, at best slowing down the growth but they have not provided any effective control. Unfortunately, unless a "miracle bullet" biological control is found we fear that *Lantana* is permanently established at Forty Mile Scrub, and will continue to degrade what was once a fascinating example of dry inland vine-thicket. Luckily for those of us who enjoy seeing native orchids in the wild, the Orchidaceae of Forty Mile Scrub, except for the *Habenaria*, can be observed in other relatively close by locations.

References

Adams P (2016) *Saccolabiopsis armitii* (F.Muell.) Dockr. – an occasional Australian orchid. *The Orchadian* 18 (7): 313-315.

Clements MA (1989) *Catalogue of Australian Orchidaceae. Australian Orchid Research 1*. p. 58. Australian Orchid Foundation, Canberra.

Jones DL, Hopley T & Duffy SM (2010) Factsheet *Sarcochilus tricalliatus*. Key to Australian Tropical Rainforest Orchids, CPBR.

Logan AE (2005) *Sarcochilus minutiflos* F.M. Bailey; a valid species, variety or synonym. *The Orchadian* 15 (2): 54-59.

Queensland Parks and Wildlife Service, 2000. *Management Plan Undara Volcanic and Forty Mile Scrub National Parks*. Queensland Parks and Wildlife Service, Brisbane.

The three authors live in North Queensland and have extensive experience with the orchids there.

8th Australasian Native Orchid Conference & Show 2016

This will be held at Kempsey from 1–4th September 2016 in association with the 15th Annual Kempsey Speciosum Spectacular, which has established itself as a major national orchid event. This year the combined show will require one enlarged show area and an enlarged Show Schedule. Ted and Winsome Walmsley pioneered the concept of a show featuring *Dendrobium speciosum*, and the first Kempsey Spectacular was held in 2002.

This year the event will be held at the property owned by the Macleay District Motor Cycle Club (Greenhill Speedway Complex), colloquially referred to as 'The Kempsey Dirt Bike Track'. Large numbers of show entries featuring the latest flowering line bred *D. speciosum*, and Australian and Australasian species and hybrids are expected from all over the country including Victoria and Queensland. Displays from ANOS groups and individual growers will be seen, as well as many plants exhibited in the general benchings. The show promises to be the best Kempsey Speciosum Spectacular yet and should be the highlight of the 2016 season.

Show set up will be 9am to 5pm Thursday 1st September with judging on Friday between 8.30am and 12.30pm. The show will be open to the public from 1.00pm Friday and closes 2pm Sunday 4th September.

The Conference speaker programme will be held at Kempsey Heights Bowling Club on Saturday 3rd September with presentations by Neil Anderton, Lloyd Edwards, Brendan Larkin, Amie McElroy, Robert Reitano and Laura Simmons, covering topics ranging from studies of *Phaius australis* to the culture and latest breeding of dendrobiums and *Sarcochilus*, and the culture and conservation of terrestrial orchid species. The conference committee appreciate the fantastic support that has been received from many ANOS Groups and individual members who have made very generous donations of sponsorship. Prize money will total over $6000, with $1000 for the Grand Champion.

If you are planning to register for the conference and presentation dinner do so as soon as possible, as spaces are filling quickly and some accommodation is booked out.

Further information can be obtained from: ANOS website www.anos.org.au , Conference website www.8thanosconference.org.au , Facebook Group: 8th ANOS Conference & Show.

Enquiries: John Zietsch, Conference Chairman, Ph. 02 6554 9733 or 0408 034 633

A Consignment of Australian Orchid Prints From *Curtis's Botanical Magazine*

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Summary

Seven Australian orchid prints from *Curtis's Botanical Magazine* in the period 1831-1861 are presented, with information about discovery, type specimens, distribution, illustrators and engravers. There are five terrestrials and two varieties of *Dendrobium speciosum* Sm. The illustrator is not stated for *Pterostylis acuminata* R.Br. and *P. concinna* R.Br. but they are very likely to have been drawn by William Hooker.

Introduction

Recently seven Australian orchid prints with original notes from *Curtis's Botanical Magazine* arrived by mail from London. The five terrestrial and two *Dendrobium speciosum* illustrations by William Hooker and Franz Bauer were converted to copperplate engravings between 1831 and 1861. Receiving this consignment is an echo of the experience of 19th Century English orchid collectors seeing unknown species from the New World for the first time. They had never seen plants like these, and initially called them by South American names like *Epidendrum* (for *Dendrobium*) as these were discovered earlier.

From the time of Cook's *Endeavour* voyage in 1770 ships had already returned from the north-east coast of Australia with plants for the English stove houses. The boisterous era of plant hunting and orchid collecting in Asia, Australia and South America in the 1870s to1890s began a European craze of growing and exhibiting novel curiosities. It was not unusual for someone well-to-do to spend a year's income on one or two plants that would bring status and notoriety, and sometimes a formal botanical name that would honour the owner in perpetuity. The orchid nurseries such as Veitch and Sanders sent out collectors in a fierce commercial rivalry to find new species.

William Curtis and his Botanical Magazine

William Curtis was born 11th January 1746 in Alton, Hampshire England. At 14 years of age he was apprenticed to his grandfather, who was the local apothecary. This required him to study plants for their medicinal properties and use. It was reported in *Curtis's Flower Garden Displayed* that William was too lazy or not interested until he caught the "the Botanic Infection" from an ostler (a man employed to look after horses for people staying at an inn) who worked at the inn next to the Apothecary. This man was unusual in that he could read and write; he was also a great admirer of Gerard and Parkinson (herbalists of the late 15th and early 16th century). After Williams' initial introduction, he moved on to more study of natural history, and started field biology, making various collections of insects, birds' eggs and plants.

Curtis moved to London and worked firstly as an assistant, then as a partner, in an apothecary's practice, but had trouble finding the time to do both medicine and natural history, so sold his half of the apothecary business to his business partner. This enabled William to purchase a patch of land to grow plants that he collected from surrounding London. He took up the position of Garden Superintendent and Botanical Demonstrator of the Society of Apothecaries, which he held for 5 years.

In 1778 he decided to open his own botanical gardens which would be open to "subscribing patrons". He was greatly helped by contributions of plants from various very well known gardens and nurseries, and grew more than 6,000 species. The garden was divided into sections - culinary, ornamental, poisonous, and medicinal British plants and shrubs. There were also several beds illustrating the Linnean system of classification. He gave lectures to the patrons, and for an extra annual payment they were able to obtain free seeds and plants when available.

While still working in his botanical gardens he was avidly writing lectures, and published a book called *A History of the Brown-tail Moth*. In 1777 William undertook the ambitious task of producing *Flora Londinensis*. It described the flora within a 10 mile radius of London in the 18th century, but the cost of producing the 6 volumes with extravagant hand-coloured copperplate

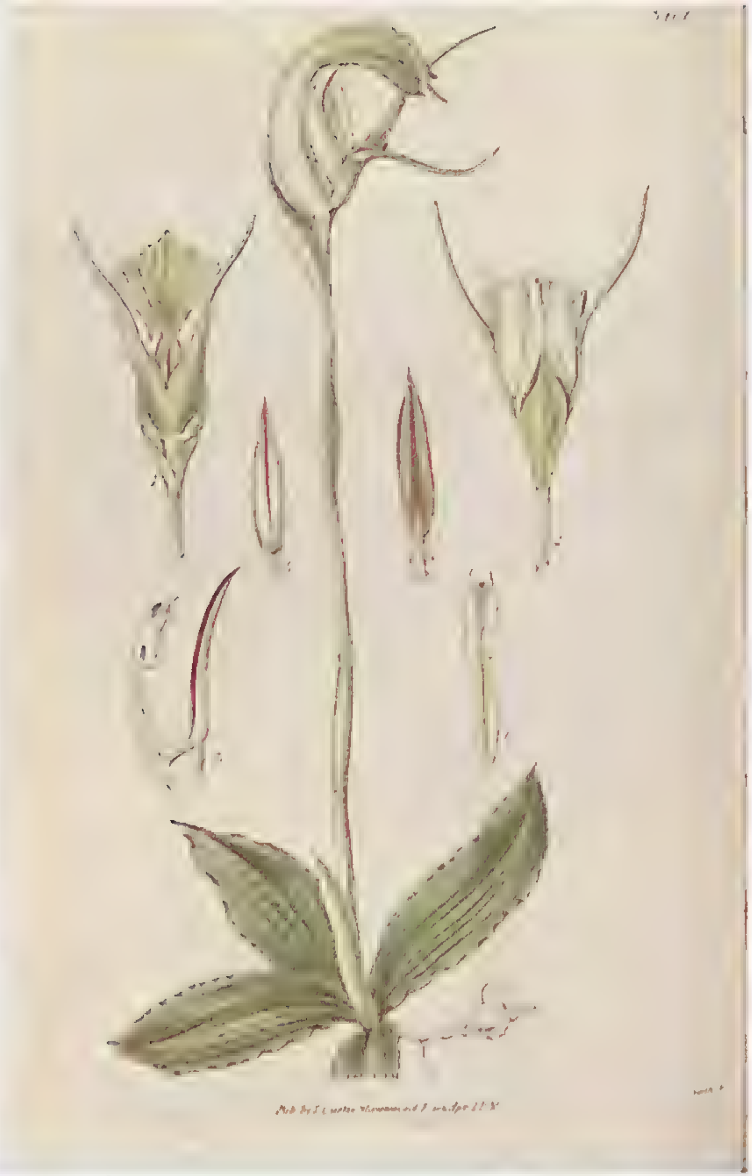

Figure 1. *Pterostylis acuminata* R.Br. (1810)
(Sharp or Pointed Greenhood)

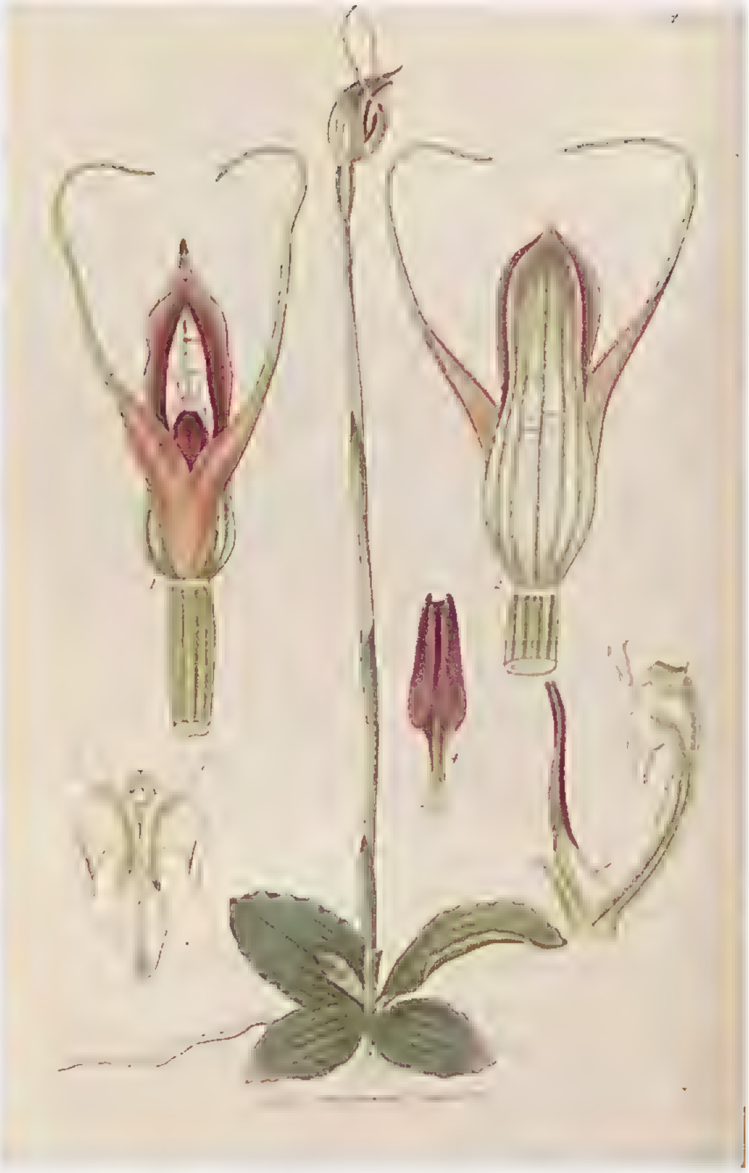

Figure 2. *Pterostylis concinna* R.Br. (1810)
(Trim Greenhood)

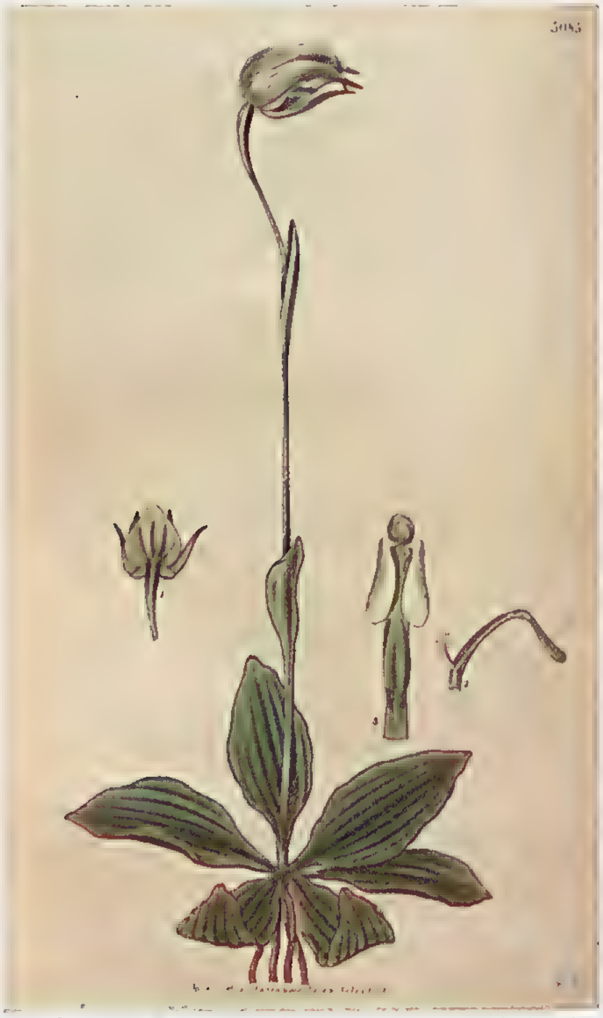

Figure 3. *Pterostylis nutans* R.Br. (1810)
(Nodding Greenhood)

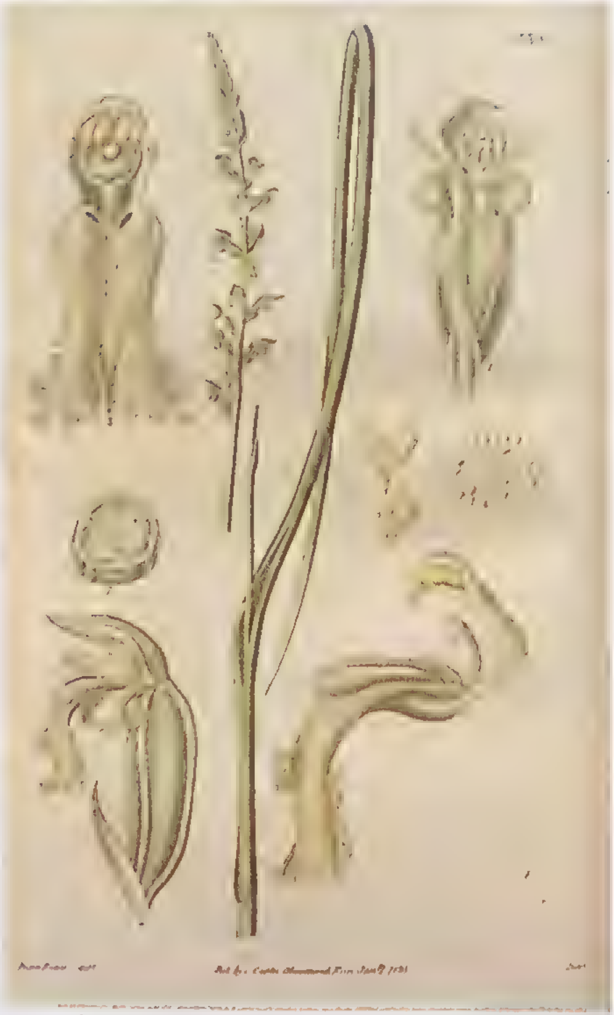

Figure 4. *Microtis media* R.Br. (1810)
(Western Onion Orchid)

prints was exorbitant, and set William back financially for a long time. Even so he came up with another idea to issue a regular magazine for the more general audience with the concept of "do botany without botanical names, almost without plants". He wrote descriptions and prepared the copperplate prints, but put them aside for 12 months, not sure whether it was a good idea or not. Finally on February 1st 1787 the first issue of *Curtis's Botanical Magazine* was released. "It proved to be the birth of a botanical and publishing phenomenon" (Tyler Whittle).

Curtis's Botanical Magazine continues to be published. Between 1984 and 1994 it was published under the name *The Kew Magazine Incorporating Curtis's Botanical Magazine*, but reverted back to its original name in 1995.

Illustrators and Engravers

William Jackson Hooker (1785-1865)

William Hooker was appointed Regis Professor of Glasgow in 1820, despite no formal qualifications in botany. A prolific writer, he was editor of *Curtis's Botanical Magazine* for many years, as well as other plant periodicals. He wrote floras and text books, as well as many entries for the magazine, and he also contributed illustrations. On the accession of Queen Victoria in 1837 he was appointed Director of Kew, a position he held until 1865. He increased the acreage from 19 to 600, laying out the gardens as they are today. He built up an enormous herbarium, ferns being his special interest. He received a large number of specimens from Allan Cunningham in Australia, corresponding with him and encouraging him to continue collecting.

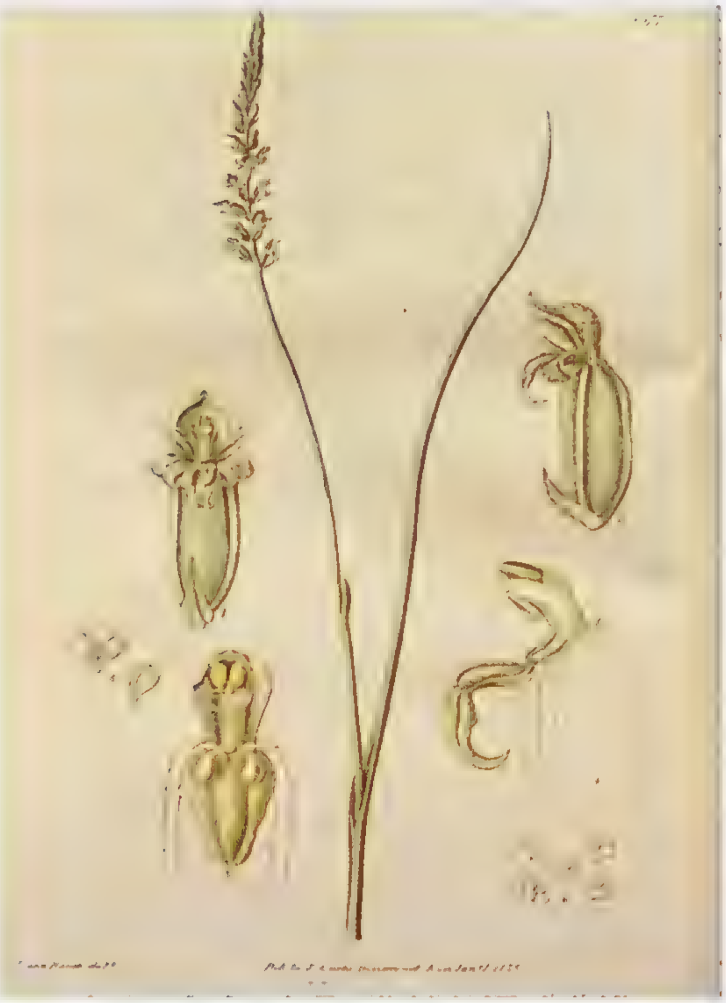

Figure 5. *Microtis parviflora* R.Br. (1810) (Slender Onion Orchid)

His son Joseph Dalton Hooker (1817-1891), who succeeded him as Director of Kew, made many collecting journeys including the Antarctic (Ross's expedition), Australia (especially Tasmania), New Zealand, Morocco and the United States.

Franz Andreas Bauer (1758-1840)

Franz was an Austrian microscopist and superb botanical artist. His father, Lucas Bauer, was court painter to the Prince of Lichtenstein. His brothers Josef and Ferdinand Bauer were also painters. After experience with watercolours of plants in Vienna he was appointed as the first botanical illustrator at Royal Botanic Gardens Kew in 1788, where he stayed for the rest of his life. He

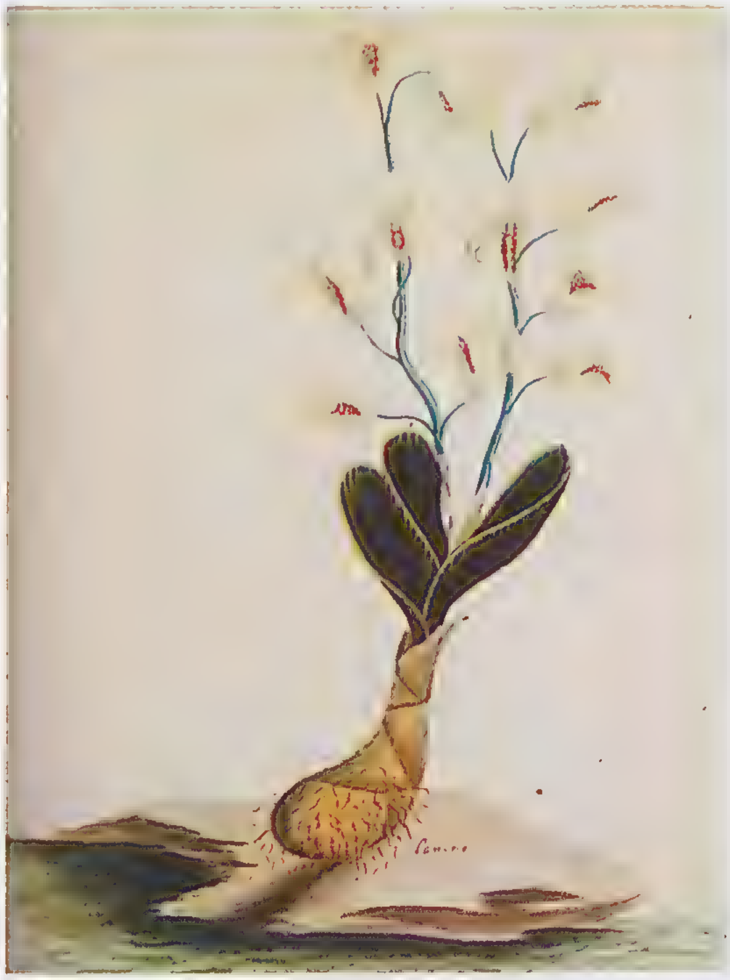

Figure 7. *D. speciosum* by Captain John Hunter c. 1789

specialised in detailed paintings and drawings of plants including many orchids, hand colouring lithographic copies of his work.

Walter Hood Fitch (1817-1892)

In January 1830 Fitch became an apprentice pattern drawer in a mill owned by Henry Monteith, where he learnt to draw Chinese and Indian patterns. He showed considerable talent in the drawing room from a young age. Monteith was a good friend of William Hooker, and hearing that he needed help with *Curtis's Botanical Magazine*, he recommended Walter Fitch. Initially Walter spent his free evenings at William Hooker's family home, mounting dried botanical specimens under the professor's guidance. Hooker lent him books on botanical prints which Walter copied easily.

Impressed with his talent, Hooker bought Fitch out of his apprenticeship and in a few months Fitch was indispensible, being reliable, fast and accurate. Hooker then entrusted him with the responsibility of drawing for *Curtis's Botanical Magazine* and his first work, *Mimulus roseus,* print number 3353, appeared on 1st October 1834. He was a brilliant artist, able to draw directly from nature, but was just as competent to produce drawings from dried plant specimens, rough sketches of botanists, and from verbal and written descriptions of plants.

After 1841 Fitch was the sole artist for all official and unofficial publications issued by Kew; his work was paid for by Hooker personally. His skill and confidence grew and he sketched many of his designs directly onto the limestone blocks used in lithography. The process involves drawing an image with a waxy crayon on a block of limestone, which is then soaked with water which seeps into the porous rock. Oil-based ink is then applied to the surface and is attracted to the crayon and repelled by the water in the stone. Fitch produced 2700 illustrations for *Curtis's Botanical Magazine*, up to 200 plates per year. After a long and distinguished career as the pre-eminent botanical artist of his day, a dispute over pay with Joseph Dalton Hooker ended Fitch's service to both the magazine and Kew. There were plenty of botanists eager to have Fitch create images for their publications, and he remained active as a botanical artist until 1888. Both men later expressed regret over the incident, but Fitch never returned to work for J.D. Hooker.

Joseph Swan (1796-1872)

A Glasgow lithographer and engraver who produced a range of work for *Curtis's Botanical Magazine* using hand colouration.

Vincent Brooks (1815-1885)

Vincent was a lithographer and colour printer who worked for his father John Brooks until 1840, when he took over the business. The company was well known for reproducing weekly caricatures in *Vanity Fair*, and did occasional botanical work. In 1862 the company became Vincent Brooks, Day and Sons.

The Curtis Prints

All are fine quality copper line engravings, typical of the era (Table 1), made well before the development of lithography apart from the *Dendrobium speciosum* var. *hillii* print.

Pterostylis acuminata R.Br. (1810) (Sharp or Pointed Greenhood)

This plant (Figure 1), collected from Port Jackson in 1827, was introduced to the Royal Gardens at Kew by Allan Cunningham. The drawing was made in April 1834. It was the fifth in the *Pterostylis*

Table 1. Australian orchids in *Curtis's Botanical Magazine*

Australian species	Plate No.	Year	Illustrator	Engraver
Pterostylis acuminata	3401	1835	Unknown	Unknown
Pterostylis concinna	3400	1835	Unknown	Swan
Pterostylis nutans	3085	1831	William Hooker	Swan
Microtis media	3378	1835	Franz Bauer	Swan
Microtis parviflora	3377	1835	Franz Bauer	Swan
Dendrobium speciosum var. *speciosum*	3074	1831	William Hooker	Swan
Dendrobium speciosum var. *hillii*	5261	1861	Walter Hood Fitch	Vincent/Brooks

illustrations, and was titled 'Acuminated *Pterostylis*'. There is no record of the illustrator or engraver, but the style of drawing, shading, leaf venation and colouration closely resembles the style of William Hooker in his depiction of *P. nutans*, and differs considerably from the technique of Franz Bauer, The other illustrator at the time, Dr. R. K. Greville, illustrated only one orchid, a *Calanthe*, and also has a different style. Hooker is therefore the most likely illustrator. There are three views of the flowers, and fine drawings of the labellum and column in parts labelled 1-3. Robert Brown collected the type specimen near Port Jackson, New South Wales, in March 1803.

The species grows in New South Wales and Queensland, and is locally common in coastal forest in sandy soil, as well as in the nearby ranges.

Pterostylis concinna R.Br. (1810) (Trim Greenhood)

This is described in the magazine as the 'Neat *Pterostylis*', 'a graceful little Orchidaceous plant like the majority of the species of this remarkable Genus' (Figure 2). It was discovered by Robert Brown on 18th August 1803 at Bennelong Point, and introduced to Kew by Allan Cunningham in 1828. The illustrator was unnamed, but the technique and result suggest it is most likely William Hooker. The drawing was made at the W.T. Aiton estate in 1830. There are 3 views of the flower, and 3 drawings of the column, with column wings and a rich brown labellum in parts labelled 3-5.

The species grows in all of the eastern Australian states, Tasmania, South Australia, New Zealand and New Caledonia. It is widespread in large colonies in various habitats. The flower is small, white with green/orange/brown. The labellum is incurved, brown, with divergent points. It is variable and may represent a complex of several

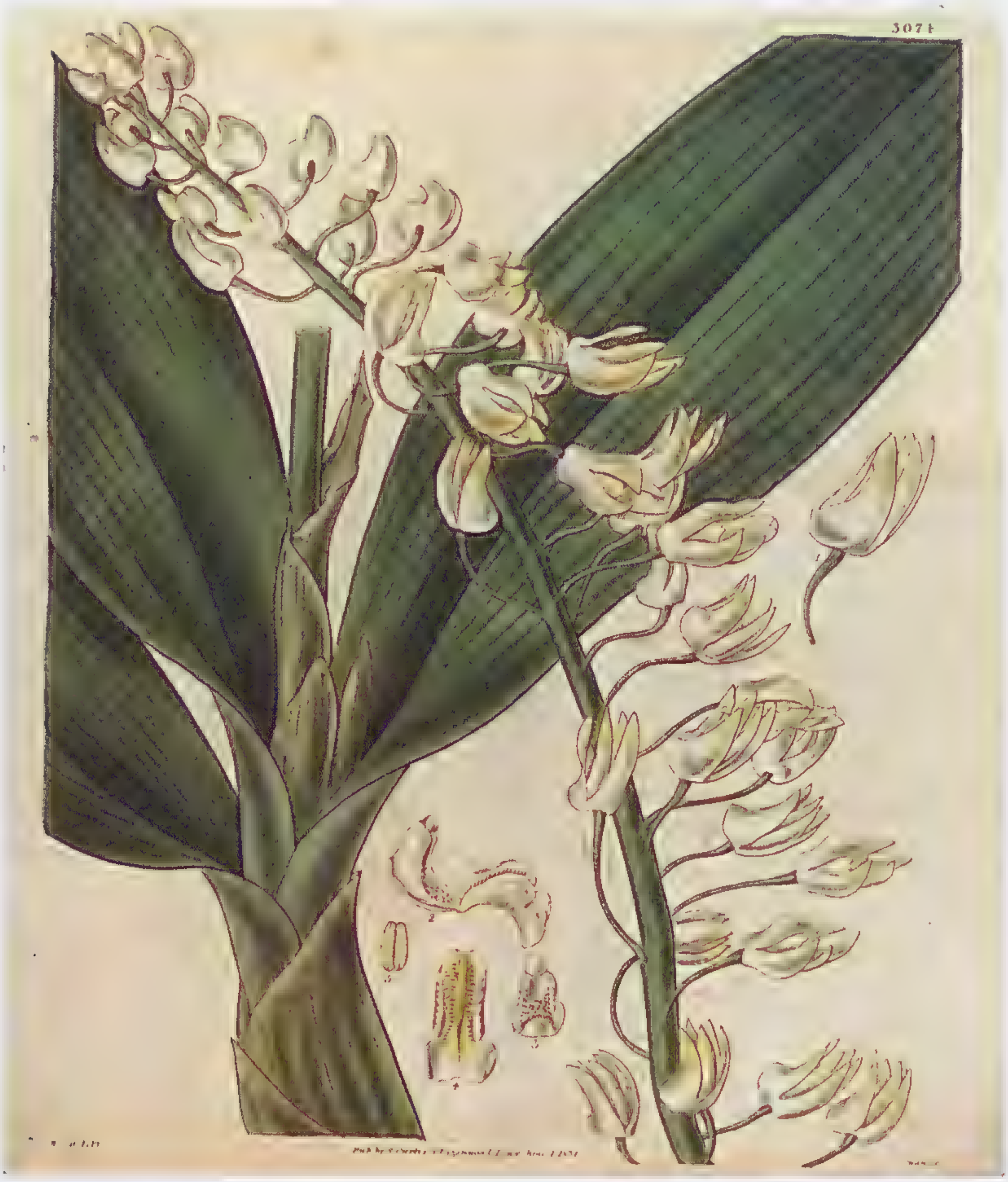

Figure 6. *Dendrobium speciosum* Smith (1804) (Large Rock Orchid)

taxa (Jeanes & Backhouse 2006). Flowering is generally between May to October, and September to January in Victoria.

Pterostylis nutans R.Br. (1810) (Nodding Greenhood)

Described originally as the Nodding-Flowered *Pterostylis*, this was introduced to Kew Gardens from New Holland in 1826 (Figure 3). The drawing was made by William Hooker in September 1828, communicated by W.T. Aiton. The type specimen was collected by Robert Brown at North Rocks, Port Jackson in July 1804. A single flowering plant which does not nod in the typical fashion is illustrated. There are smaller drawings of a back view column and labellum in parts labelled 1-3.

This species is widespread and abundant in eastern Australian states, South Australia, Tasmania and New Zealand. It grows in a wide range of sheltered moist environments. Plants are usually strongly nodding, translucent green with a densely hairy blunt labellum. Flowering time is variably described as March to December.

Microtis media R.Br. (1810) (Western Onion Orchid)

This plant (Figure 4), described as the Middle-sized *Microtis*, was a chance find in a sod taken from swampy ground at King George Sound, Western Australia in 1823. It 'sprang up unexpectedly' and produced flowers in 1825. Franz Bauer was the illustrator and the plant died after flowering. Robert Brown collected it in December 1801 in the same area at Albany, Western Australia. A whole plant is illustrated with fewer flowers than normal (about 10) with beautiful detail of all the floral parts, especially the labellar excrescences, labelled 2-7.

The species is confined to Western Australia, where it is widespread and common in wetter habitats. It is twice as large as *M. parviflora* and has a narrow oblong labellum and large, round, marginal excrescences. There are two comma-shaped basal calli with an apical callus. Flowering time is September to January. It is described in Brown *et al* (2013) as *M. media* R.Br. subsp. *media* (common mignonette orchid).

Microtis parviflora R.Br. (1810) (Slender Onion Orchid)

This plant (Figure 5) was described in the magazine as the Small-flowered *Microtis*. It was sent from Port Jackson by Allan Cunningham in 1824, where it flowered in 1828. It also flowered in the Glasgow Botanic Garden. Cunningham noted "the species affects clayey soils in low, damp forest grounds, where should the season provide moderately moist ... it appears in abundance" Franz Bauer illustrated a raceme, leaf and stalk in exquisite detail of the floral parts, with 2 prominent stalked basal calli. Robert Brown collected the type specimen from Port Clinton, Central Queensland on 22nd August 1802.

The species has a wide distribution including eastern Australian states, Tasmania, South Australia, New Zealand, Lord Howe Island, Vanuatu and New Caledonia. It is widespread and common on moist soils and may colonize pastures and gardens. The heart-shaped labellum is entire with a blunt apex, 2 basal calli and the apical callus is minimal or absent. It flowers in September to January.

Dendrobium speciosum Smith (1804) (Large Rock Orchid)

The 'Great *Dendrobium*', named by J.E. Smith in *Exotic Botany* and "long cultivated in our stores... has rarely produced blossoms" (Figure 6). In 1831 a flowering plant from the Liverpool Botanic Garden was illustrated by William Hooker. The apex of a stem, and basal parts of 3 leaves and a peduncle are drawn and an inflorescence with only partially open flowers which are white-yellow with apical buds. Details of the column, labellum, anther, stigma and pollinia are shown in parts 2-5. The plant is identifiable as var. *speciosum*. The drawing of non-opened flowers is surprising, and there is a note accompanying the illustration that *D. speciosum* was present in many collections but rarely flowered. After the drawing was made "the blossoms were considerably more expanded than have been represented". It is likely that the conditions were not suitable for flowers to fully open. The lack of flowering as stated in many accounts may have contributed to the decision to illustrate the flowers in a partly opened state. The notes compare the drawing with those of colonial artists, who produced botanically inaccurate stylized versions that sometimes lacked a mentum and were disproportionately large. The writer concludes correctly that the "New Holland (artists) were not skilled in Botanical drawings". An example of an earlier illustration of var. *speciosum* is one by Captain John Hunter RN of the First Fleet c. 1798 (Figure 7).

The species is a complex with 9 described varieties occurring from eastern Victoria to north Queensland, with a spring flowering time except for var. *capricornicum*, which flowers between April and September (Adams, Burke & Lawson 2006)

Dendrobium speciosum var. *hillii* Masters (1877)

This illustration was made in 1861, when chromolithography had replaced hand colouring (Figure 8). It was listed as *Dendrobium hillii*, with a common name of Mr. Hill's *Dendrobium*. The plant used for drawing was originally supplied by Walter Hill, superintendent of the Botanic Garden at Moreton Bay, Queensland. There is a note accompanying the print saying that *D. hillii* was different from the earlier illustrated *D. speciosum*, as it had longer stems and leaves, and very drooping long racemes with many crowded

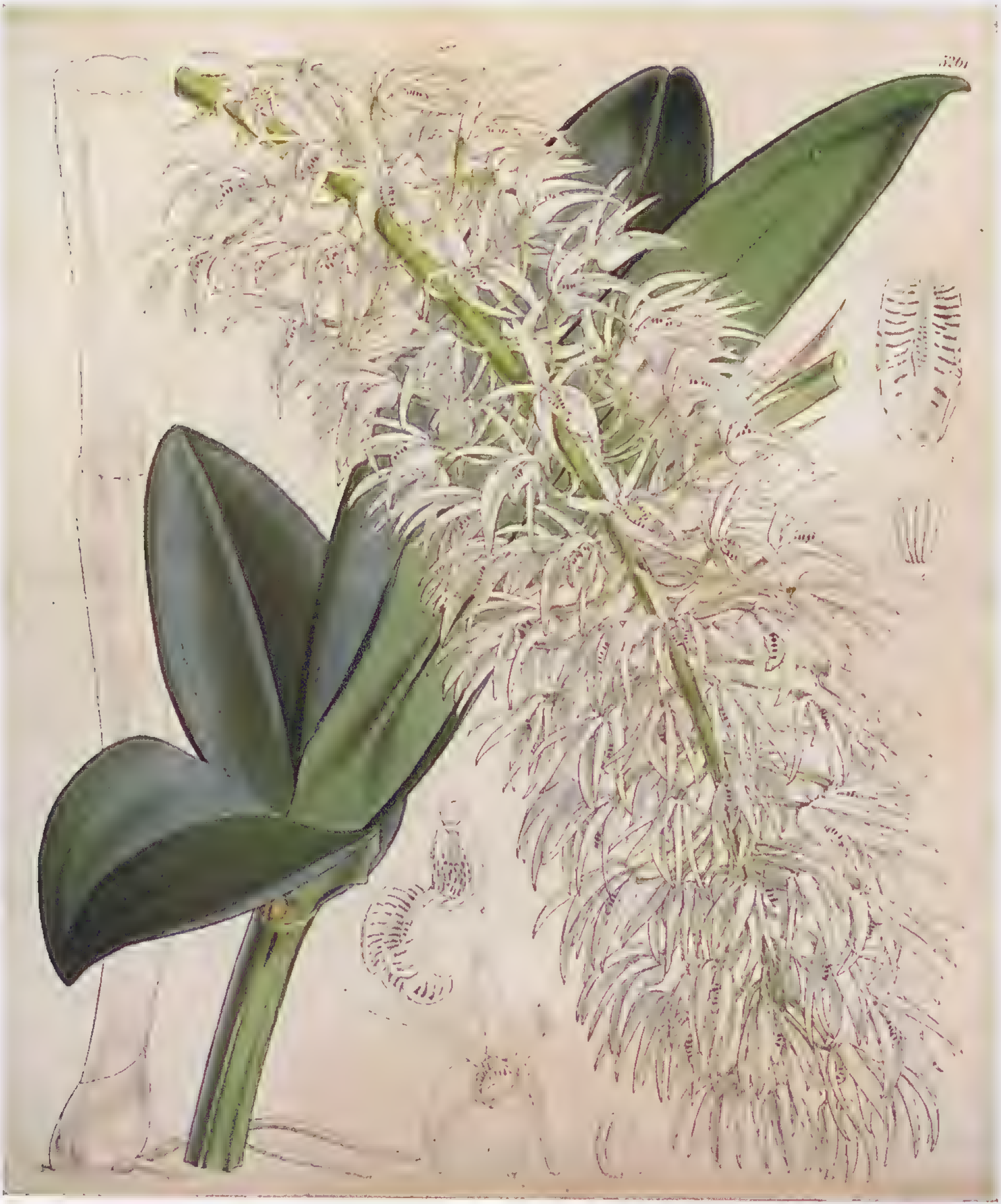

Figure 8. *Dendrobium speciosum* var. *hillii* Masters (1877)

narrow-petalled flowers. There is an uncoloured drawing of a pseudobulb with a few roots, and a main apex of a pseudobulb with 4 leaves, and a long acting raceme of crowded white flowers, mainly open. Details of floral parts are provided in small uncoloured drawings. The illustrator was W.H. Fitch, who made many fine drawings for the magazine. The double page depiction is more accurate than preceding illustrations.

References

Adams PB, Burke JB & Lawson SD (2006) *Dendrobium speciosum* Sm. The Great *Dendrobium*, is a single species complex. *Orchadian* 15:208-240.

Brown A, Dixon K, French C & Brockman G (2013) *Field guide to the orchids of Western Australia: the definitive guide to the native orchids of Western Australia.* Simon Nevill Publications, Floreat, W.A.

Jeanes J & Backhouse G (2006) *Wild Orchids of Victoria.* Aquatic Photographics, Seaford, Australia.

Malcolm McGowan is an ANOS Associate Judge, with a keen interest in D. speciosum, botanical illustration and history of Australian orchids.

Vale George Hillman

Tony Clarke

George Hillman passed away in early May 2016. George was a life member of ANOS Inc., serving as a Councillor from 1989 to 2003. He was also a life member of the Newcastle Group of ANOS. The travel he endured to get to Council meetings is an epic in itself, requiring a bus trip from Nelson Bay (where he lived) to Newcastle railway station, catching a train to Central Sydney, and then another to Wollongong so he could get a lift to the meetings with the late Ron Wheeldon. When Ron stood down from Council, George had to catch a second train to Leumeah so he could get a lift with John Riley to the meetings. Of course George had to do the reverse trip to get back home.

He became deeply interested in terrestrial orchids, and together with John Riley became part of the Orchid Research Group for the Plant Biodiversity section of the CSIRO. He collected specimens under license for them. He is honoured and recognised by having *Caladenia hillmanii* D.L. Jones named after him.

George also worked with the Port Stephens Council in an honorary capacity, doing surveys of the orchid populations of the Port Stephens area. It was during this work that George noticed that a purple flowered *Diuris*, which had been regarded as *Diuris punctata* Sm., was different from the description and photos. It was subsequently described as *Diuris arenaria* D.L. Jones.

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Growing Orchids Outside in Tasmania

Darryl Corbett
black_spinner@hotmail.com

Many years ago, when I first took up fly fishing, I decided early in the season to fish Lake Kay, in the Nineteen Lagoons area of Tasmania's Central Highlands. I knew the gate to the area was closed but I didn't think it was too far to walk, and after leaving the car I remember walking past the sign to Double Bar Lagoon and thinking 3 km there's no way I'm going to walk that far. By the time I had returned to the gate from Lake Kay I had walked 19 km in neoprene chest waders. This orchid journey is a bit like that, and I certainly never expected it to expand to the extent that it has.

Climate

Ulverstone is situated on the central northwest coast of Tasmania, at the mouth of the Leven River. It has a population of approximately 10,000 and is surrounded by rich farmland. The climate is moderated by the close proximity to Bass Strait, with afternoon sea breezes (gales some days) which helps keep summer daytime temperatures down to between 20°C to a rare high of 30°C, with 23°C about the norm. Night temperatures are down to 15– 20°C with the occasional drop under 10°C or a burst of cold from Antarctica. This year there was widespread snow in the highlands in February. Autumn is ideal, with the odd shower, and as the days shorten the temperature gradually gets lower with occasional light frost. June, the start of winter, is usually dry and frosty early in the month, and then the rain starts to be more prevalent going into July. July and August are wet, wild and cold up until the end of the second week of August when sanity starts to return, usually still wet but starting to warm up. In September the days are warming but the nights are still cold. Orchids growing outside and in the glasshouse can survive winter only to turn their toes up in September (Table 1). I have found the orchids can handle wet or cold, but they don't like it wet and cold, and this can very often be September here i.e. showers late in the day then a frost at night. The average yearly rainfall is 950 mm but can fluctuate from 600–1200 mm.

The outside rock wall

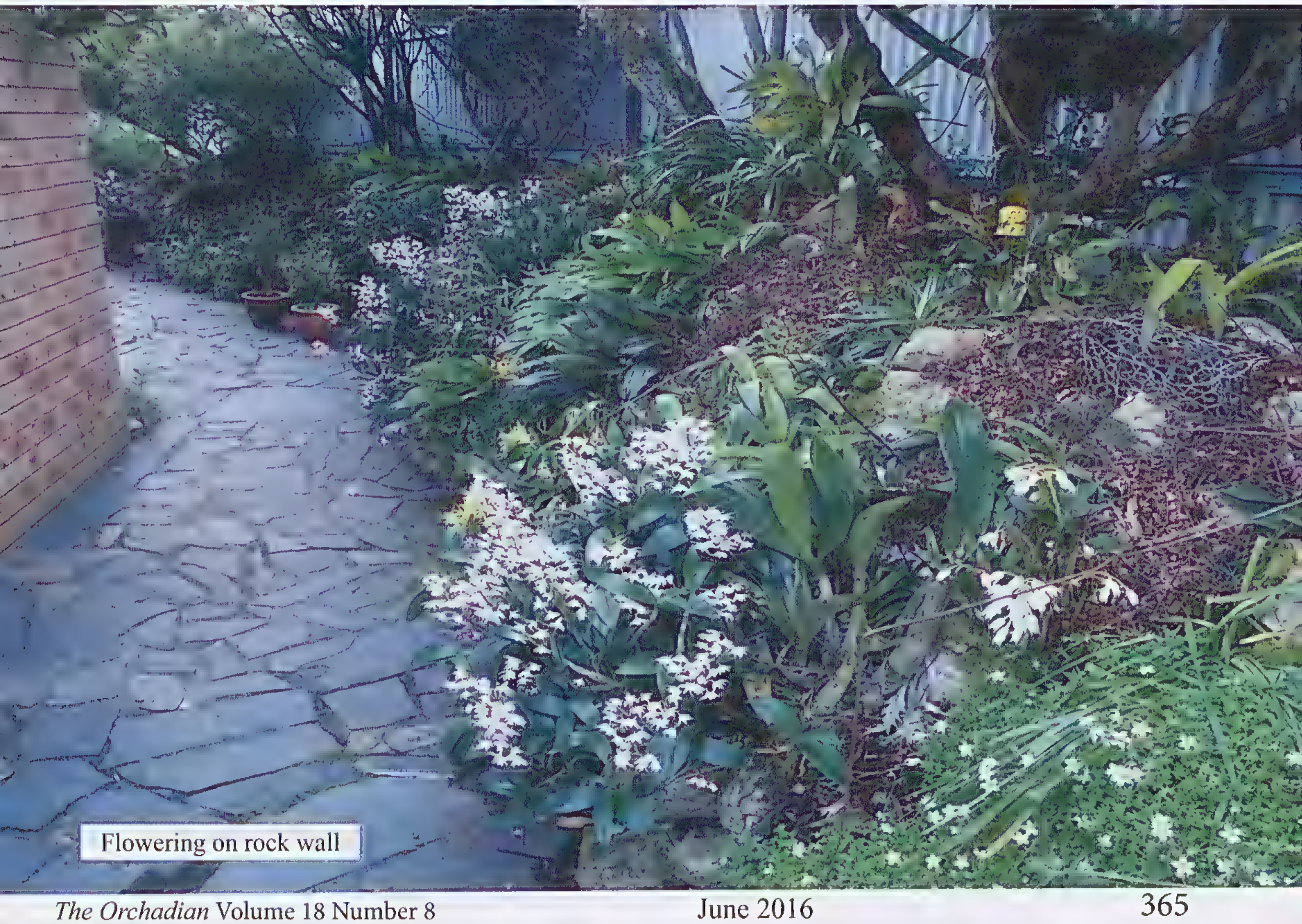
Jenny and I built our house on the western edge of Ulverstone in 1988. It was cut into the ground just under 1m on the northern side and we covered the bank with quartz rocks from a friend's property. In 2001 we tried *Dendrobium* keikis in the rock crevices. I went to quite a bit of trouble using orchid mix to fill the crevices, later using *Sphagnum* moss. Now when I knock the odd keiki off with the broom sweeping the path I throw them up on the garden or poke them in a gap in the rocks and leave them. The rock wall is behind a north facing colorbond fence, with the fence running due east to west. At its narrowest point the wall is 1m from the fence and at its widest about 3m. The face of the rock wall borders a black random slate path that separates our house from the garden. In the winter time the orchids in the rock wall get a lot of reflected light from the windows of the house, and heat from the slate path.

My knowledge of orchids was limited to seeing Cymbidiums and *Dendrobium kingianum* at other places. In 2001 we visited the Burnie Orchid Show and bought *D.* X *delicatum* 'Apple Blossom' and *D. kingianum* 'Lipstick'. I knocked the dendrobiums out of their pots, pulled a couple of rocks out of the rock wall, filled the holes up with potting mix and watched them slowly go down hill for the next few months, before pulling them back out to see why. I found that all the roots had rotted off. So after that it was *Sphagnum* moss and lots of quartz gravel. Now, I shake off the potting mix, spread out the roots, put some garden mulch over them, sit some rocks on and wait for new growths with roots just starting before I plant them out. In 2003 I purchased some *Dendrobium* seedlings in 50mm tubes from Down Under Native

Table 1. Winter temperature statistics inside our unheated glasshouse.

Temperature	June	July	August	September
Average minimum °C	6.4	5.6	6.2	6.5
Average nights under 5.5°C	12	15	12	11
Average nights under 10°C	27	29	27	26

Established rock wall



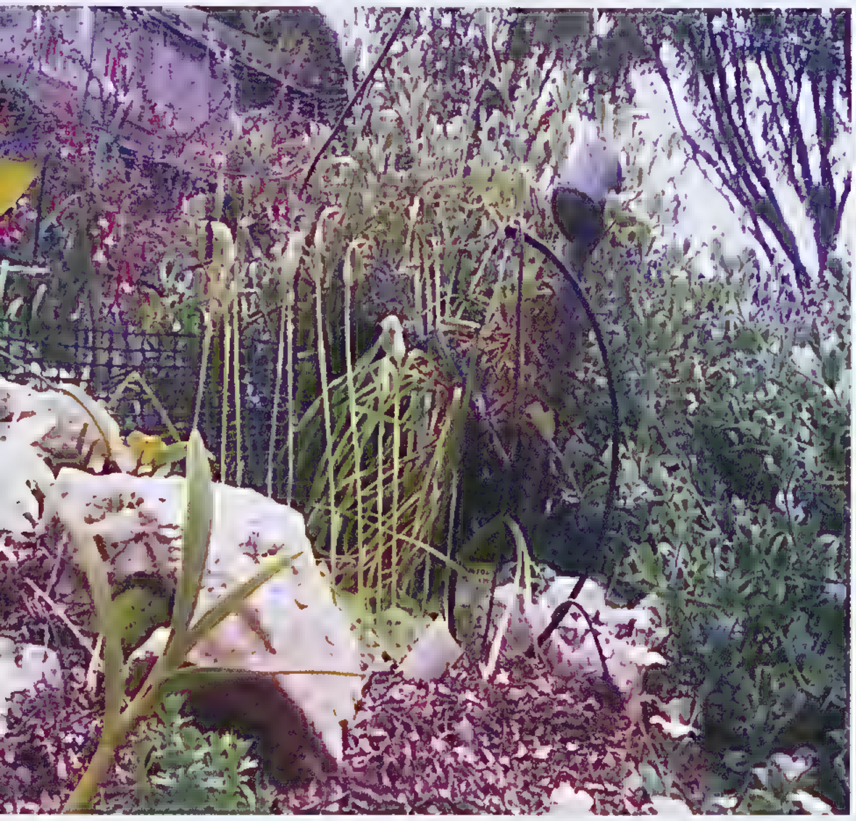
Flowering on rock wall

Orchids (DUNO) and planted them straight into the rock wall. This is also the year I discovered Orchids & More at Sulphur Creek, where I found any excuse to see what was on offer. I gathered up *Sarcochilus* seedlings and divisions and more *Dendrobium* seedlings. Thirteen years later *D.* Sheena and *D.* Bill Dobson have canes up to 550 mm tall and flower in late October. *Dendrobium* Yellow Venture, purchased in 2004 from DUNO, now has canes nearly 700mm tall and is still yet to flower. I want the dendrobiums in the rock wall to look as natural as possible so I leave the keikis on, and the spring show is quite spectacular.

Dendrobium speciosum is a species I have tried over the years. I put the seedlings out in the rock wall originally but the general consensus was that IF they grew they would take over the whole wall, so I removed and potted them all, except the keiki and one seedling, which I planted on the eastern end of the rock wall. That end of the wall had no overhead protection in winter and I lost a couple of leaves off a new cane on the keiki three years ago due to frost. The flowers also ended up frost damaged. *Sarcochilus* seedlings and divisions are slow on the wall but once established don't look back. Every year after the *Sarcochilus* shows I plant out the least desirable ones to make room for new seedling purchases, their shortcomings being less noticeable in the rock wall. I position the potted plants on top of a rock or the leaf litter mulch using small rocks or bird net staked down to hold them in place. *Sarcochilus* in the garden start flowering mid November and through till after Christmas. They never lose their roots and look healthy all year round, with many carrying big seed pods which I use to scatter seed when they mature.

Pterostylis curta is growing on the eastern end of the rock wall. I picked up a pot in the raffle at a meeting in 2006. This did well until the blackbirds uprooted nearly all of the tubers. It is still growing where I planted it, but not so densely. In the garden out the front where I don't cultivate or water I have some rescued *Chiloglottis reflexa.* These orchids grow naturally in the bush around our house.

I have raised the height of the rock wall twice to accommodate more and more orchids, and I tied a 4m *Melaleuca* tree trunk to the fence to add more height, and to make pendulous racemes more visible. The rock wall is now 20m long with a height of over 1m and about 1m wide. It contains 250 to 300 orchids. Over the years I have scattered millions of seed of *Dendrobium* and *Sarcochilus*, with seedlings just starting to appear. Early on I decided that if I was going to grow orchids outside in the garden they would have to toughen up and take what nature dished up. Initially I didn't think we had many frosts



Pterostylis curta 2007

Sarcochilus seedlings

through winter and certainly none that would damage orchids, but this last winter there were night after night of temperatures down around 1°–2°C and even as low as –2°C, with the days barely making 13°C.

Rock wall culture

Watering is done via a micro spray system. I turn the sprayers on at night for 5 to10 minutes if it has been hot (20°–30°C) or windy, which is fairly often through summer. As soon as dewy nights begin, I water only if we have a very warm windy day, or there are no showers for over a week. I don't water early in the morning, as this can lead to rotting when the day warms. Night time watering allows the plants time to re-hydrate. Shading is provided by a *Protea,* correas, *Sannantha crenulata* (syn. *Baeckea crenatifolia)*, *Grevillea* 'Poorinda Peter' and *Callistemon* species.

Fertilizing is sparingly used with 12–14 month controlled release pellets every couple of years, and 1–2 month slow release Rose food pellets in mid summer. About four or five times during the year when it's raining I spray the whole area with a seaweed solution. I found that the more fertilizer I used the more aphids I accumulated. Pests will always be part of growing anything. I go out every night with the torch looking for slugs, snails, vine weevils and caterpillars. Caterpillars are the worst, because they start eating way before they are big enough to be seen. Slugs and snails are not as prevalent as when I first started. This has been helped by planting ground cover *Campanula* that the snails & slugs seem to like. Vine weevils were a major pest for a few years until I worked out what was attracting them and got rid of it. When I first started planting out seedlings I'd come home from work and they were dug out by blackbirds, so I bird netted the first 10m of the rock wall. I have since removed it as it became a nuisance to work around.

The rock wall runs east to west and is on the southern side of a 1.6m high fence, so it is quite shaded.

Dendrobium kingianum and its hybrids are easy, either growing keikis or divisions. Hybrids with *S. hartmannii* and *S. fitzgeraldii* in their background do well if you can keep the frost off. *Sphagnum* moss gets new plants started but it breaks down in the garden, and every shrub or tree within a couple of meters will quickly take over. Mulch has varied over the years from myrtle (*Nothofagus cunninghamii*) leaf litter twice yearly to bracken fern or shrub prunings straight out of the mulcher, spread thinly. Lawn moss put on the *Melaleuca* log stays alive all year round and has never become water repellent or soggy. Australian genera growing on or in the rock wall and on the *Melaleuca* log include *D. kingianum* cultivars, *D. speciosum*, *D.* Mingle's Sapphire (exotic orchid), *S. hartmannii* and *S. fitzgeraldii* and hybrids, *Pterostylis curta*, and *Chiloglottis reflexa.*

Unlike the northwest coast, Launceston in the north and Hobart down south have very different challenges. Launceston is 45 km inland from Bass Strait and it is cold (down to –5°C) and frosty, with frequent fog in winter, and hot and dry in summer. Hobart suffers frequent blasts of hot dry air in summer and cold Antarctic blasts in winter, with occasional snow falls in the city. Over the years quite a few interstate and overseas orchid growers have found it hard to believe that so many orchid genera flourish outside in Tasmania's supposed harsh climate. They forget Tasmania covers a very diverse range of climates, with the north coast being relatively mild. Even when it's cold and wet in the middle of winter we can enjoy the plants without having to go down to the glasshouse.

Growing orchids outside as epiphytes

I have filled the shrubs and trees through some areas of the garden with orchids. Different epiphytes pose different challenges. *Sannantha crenulata* has a fine ribbed bark and the orchid roots like to follow the ribs. Mounted on it are *S. hillii*, *D.* Australian Ginger and *D. kingianum*. *Kunzea baxteri* has *S. falcatus*, *D. pugioniforme*, *Rhinochilus* Yellow Cascades, and *D. striolatum*. *Grevillea* 'Poorinda Peter' is a smooth barked large shrub. This is the one I experimented with first in 2004. Ken Russell gave me some *S. falcatus* plants which I mounted using pieces of panty hose. They are still there and each year they flower and set a few seed pods which I leave on. I tried *S. australis* - they grew like mad and flowered two years in a row then promptly died, with the roots lasting on the branch for years.

Plectorrhiza tridentata hangs on the smaller twiggy branches and they flower and thrive. Also growing are *D.* Mingle's Sapphire, *D. tetragonum* var. *tetragonum*, *Plectochilus* Richard Jost, *S.* First Light, *S. hillii*, *Plectochilus* Kilgra, and *D. fleckeri*, which I bought on a very small piece of cork with canes about 150mm tall. I tied it to a smallish branch and about two years later it put up another cane about 250mm then grew slowly and flowered two years running.

At the front gate is *Callistemon viminalis* with ribbed bark. It grew very tall, so three years ago I cut it back to around 2.1 m high, which meant tying shade cloth over the top for six months till the new growths got going. On this small tree are *D.* Mingles Sapphire, *D. falcorostrum*, *D. aemulum, D. moorei, D. linguiforme, Bulbophyllum shepherdii, B. exiguum, S. falcatus*, *Plectochilus* Kilgra and terete *Dendrobium* hybrids.

In the backyard is another *Callistemon* with *D.* Australian Ginger seedlings. On a very large *Banksia integrifolia* tree I have recently mounted *D. speciosum* hybrid divisions into the main forks. *Dendrobium* Andrew Persson x *D.* X *gracillimum* is growing well in a fork of the main trunk. I first started tying the smaller epiphytes on with strips of stockings to hold a wad of moss over the roots. This worked but it was hard to get the stocking off. Next I tried cable ties, but they need repeated loosening off as the branches expand. Now I use grafting tape and no moss at all. The grafting tape stretches as the branches grow, and retains enough humidity for establishment. Some orchids like *Bulbophyllum exiguum* have fine roots and small bulbs. I have found it is easier to mount them using strips of bird net stretched over the whole plant, removed in part later on.

Fertilizing mounted orchids is now done with a seaweed solution 4 or 5 times a year, usually when it's raining. For watering I use the same micro spray system as the rock wall. I have a few sprayers up through the shrubs and this emits a very dense mist 5 to 10 minutes a night after hot days. When I divide orchids from the glasshouse, I take a spare piece to experiment with outside. Some do well, others survive but struggle. When you consider all those orchids you have in the shade house or glasshouse there are not very many that go to meetings or shows. No doubt sometime in the future the *Grevillea* will decline and I will have a lot of ready made mounted orchids to take to meetings or shows.

Darryl is a keen gardener, orchid grower and AOC judging panel member who likes a challenge.

D. falcorostrum 2016

D. pugioniforme 2011

Culture - Keeping It Simple

Text and photographs by David Butler
david.greenvista@internode.on.net

Over the years we discover ways of making orchid growing simpler and easier. Sometimes they are just happy discoveries out of the blue, but mostly these ideas and methods are learnt from watching other growers. We are often surprised at the need to learn them from someone else as they can be really quite simple. At the risk of perhaps stating the obvious, I thought it may help to note a few down. Most are things which for me, have saved time, or made orchid growing that little bit simpler and more productive.

Bush House Design

In the Sydney region a bush house is sufficient for the culture of most of the popular Australian orchids. The design is usually a structure covered in shade-cloth, with or without a weatherproof covering, and often featuring extra weather protection on the south and west sides. A sloping roof is preferable to a flat one as the slope prevents the accumulation of leaves and also allows water run-off should a weather-proof roof be used. Such a roof is useful as protection for plants and flowers in wet weather and from frost damage in winter. The waterproof cover may be permanent or temporary and may only be needed over part of the bush house.

Weather protection to the south and west walls is often afforded by using solid sheeting, but this may reduce air movement in parts of the growing area. Extra wind or sun protection can often be achieved by using shade cloth, thus still allowing ventilation through all sides of the bush house. I have found a double layer of 70% shade cloth to be very effective both in the case of strong winds and afternoon sun.

Shading

Make the most of winter light. Most shade cloth is now knitted and lets less light through when the sun is at a low angle. To maximise light penetration, especially during winter, it is suggested that the roof slope face roughly north so that as much sunlight as possible reaches the plants.

Shade adjustment is often required at change of seasons. Internally, an extra layer of shade cloth can be hung below the roof and a labour saving idea is to suspend it by curtain rings running along stretched wires. The shade cloth 'curtain' can simply be pushed to the end when not needed. Extra shade cloth externally, such as over the roof, is often more effective when held clear of the existing covering at sufficient distance to allow the passage of moving air between them, as this will increase the cooling effect. Insect proofing the bush house can save a lot of hassles. In the Sydney area this is especially so in regard to crickets and *Dendrobium* beetle.

Watering and fertilising

Watering and fertilising depends on each grower's conditions, the genera grown, and many other considerations. However a golden rule is not to overwater orchids, and to fertilise regularly. A fogging nozzle on the end of the hose can often be useful in raising the humidity on hot days without overly wetting the plants, and can also be used to wet the shade cloth internally to bring down the temperature. It is especially appropriate for damping down mounted orchids without wetting those in pots nearby, and orchids grown under a solid roof may appreciate a morning fog to replicate the dew. In my experience the most effective fogging nozzle is the superfine type made in America, rated as half a gallon per minute.

Fertilising a small collection can be made easier using a simple injector. This is a brass fitting which goes on the tap and has a tube off the side which sucks concentrated fertiliser into the hose to mix, in the correct proportion with the water. This method makes the fertilising of the collection, particularly suspended plants and mounts, an easy task.

Benching

Increasing bench space within the bush house is a subject that occupies all growers' minds, and it could be time to consider installing rolling

Correct environments make for happy inhabitants

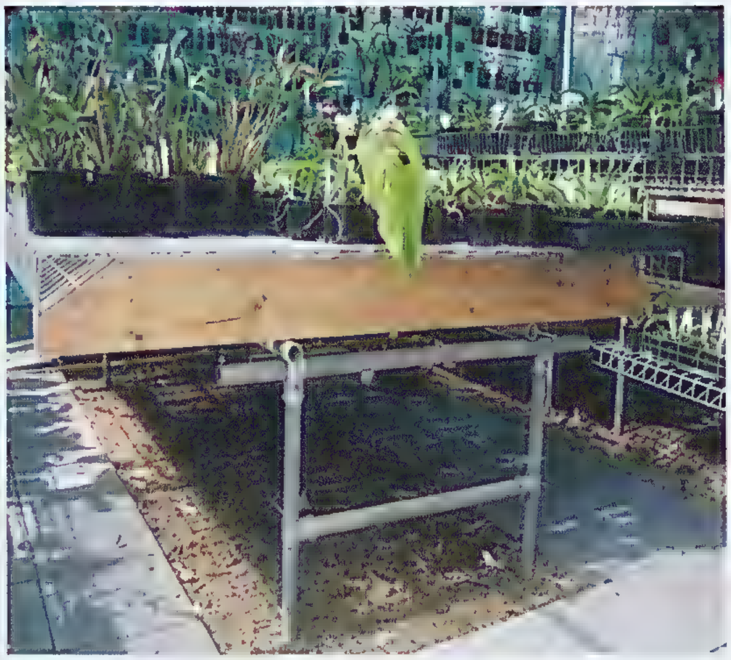
Extra summer shade cloth is held clear of the permanent covering

benches. Benching space soon fills with plants and the grower starts looking for ways to solve the problem. Hanging pots overhead and on side walls is a help, but another space-saving method is to fit rolling benches. This reduces the number of walkways and increases the growing area within the same overall space. The rolling bench principle is simple and works on a critical relationship between the width of bench, walkways and supporting frame. It was easy in the old days being 4ft, 2ft and 3ft. The decimal equivalent is approx. 1200mm, 600mm, and 900mm. These widths are only suggestions, and care is needed with a 1200 wide rolling bench as overbalancing is possible if loaded down on one side only. A method of overcoming this tendency is to increase the width of the bench and supporting frame while keeping the walkway at 600mm, or try using heavier framing for the bench. The rails are best made of pipe rather than timber so the rolling of the bench is not caught up on loose objects such as bits of bark.

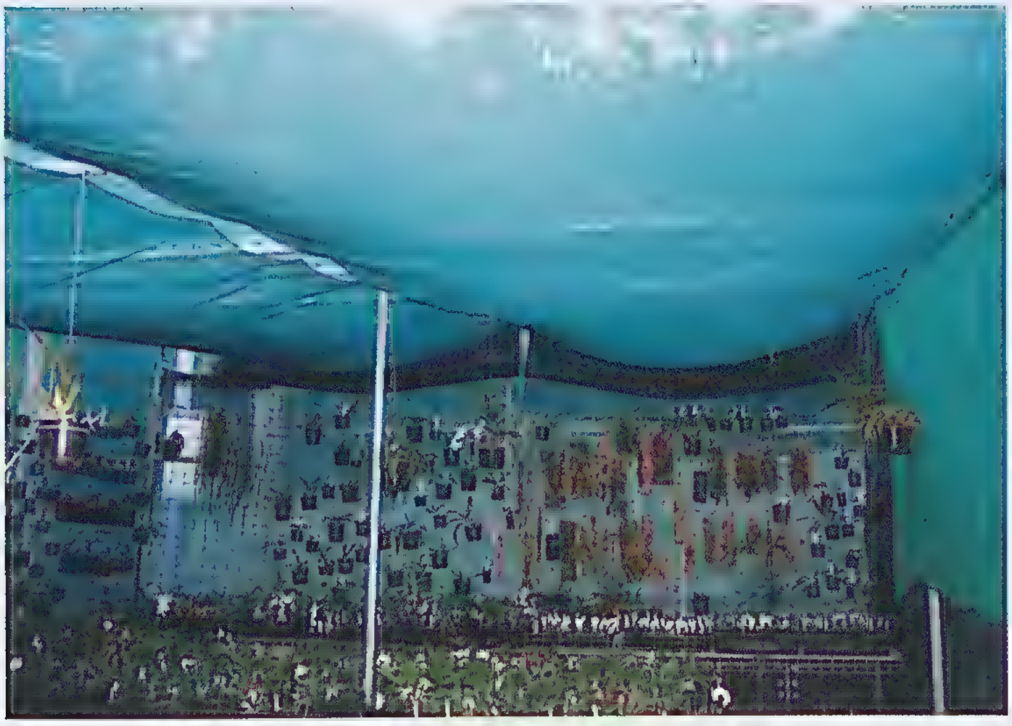
There are lots of other ideas, and developing these concepts to suit your own conditions is part of the attraction of orchid growing, so that as well as being a challenge, it is an exciting voyage of discovery.

David Butler of Green Vista Orchids is a breeder and grower of Australian orchids, particularly Sarcochilus.

Fogging spray



Rolling bench using pipes rolling on pipes with substantial timber frame and galvanised fence panel



Suspended shade cloth on wires readily provides extra shade if needed

Watering with fertiliser added by injecting concentrate from drum or bucket

An Overview of Orchid Conservation Activities in Tasmania

Text and photographs by Geoff Curry
geoff.curry59@gmail.com

Tasmania has 212 orchid species, with 68 listed in the state *Threatened Species Protection Act 1995*, and 32 listed under the *Commonwealth Environmental Protection and Biodiversity Conservation Act 1999*. The majority of the work being done to study, record and protect these orchids is coordinated under The Threatened Flora Link. This is a partnership between the Wildcare group Threatened Plants Tasmania (TPT), Department of Primary Industries, Parks, Water and Environment (DPIPWE) Threatened Species Section, the three Tasmanian National Resource Management bodies (NRM North, South and Cradle Coast), and the Royal Tasmanian Botanical Gardens and Friends of the Royal Botanical Gardens group to engage and encourage volunteers in conservation activities for priority threatened plant species. It has a current focus on approximately 20 orchid species.

TPT is a volunteer group that conducts survey and monitoring field trips for Threatened Flora Link projects. It has several long term orchid monitoring sites, with transects to collect data and add to the Tasmanian Natural Values Atlas. I am an executive member of TPT and often coordinate and lead orchid field trips and surveys. I am also a member of two orchid societies and Conservation Officer for Orchids Tasmania, the overseeing body for the four Australian Orchid Council societies.

It has been a long hot and dry summer in Tasmania, best highlighted by the historically low levels in the Hydro dams and an impending energy crisis in the state. During the height of summer there were over 80 bushfires burning across the state, many uncontrolled in remote inaccessible bushland that were started by dry lightning strikes. The largest of these fires burnt more than 100,000 hectares, including 19,000 hectares (approximately 1.2%) of the World Heritage Area. Interstate fire crews were brought to Tasmania to assist fighting this massive fire. It is too early to know what effects these fires will have long term, especially in the highland areas that haven't been burnt in recorded history but its generally agreed some of the areas burnt in the Arthur Pieman Conservation Area will benefit from the fires as they were becoming very overgrown. None of TPT's monitoring transects were affected by the bushfires.

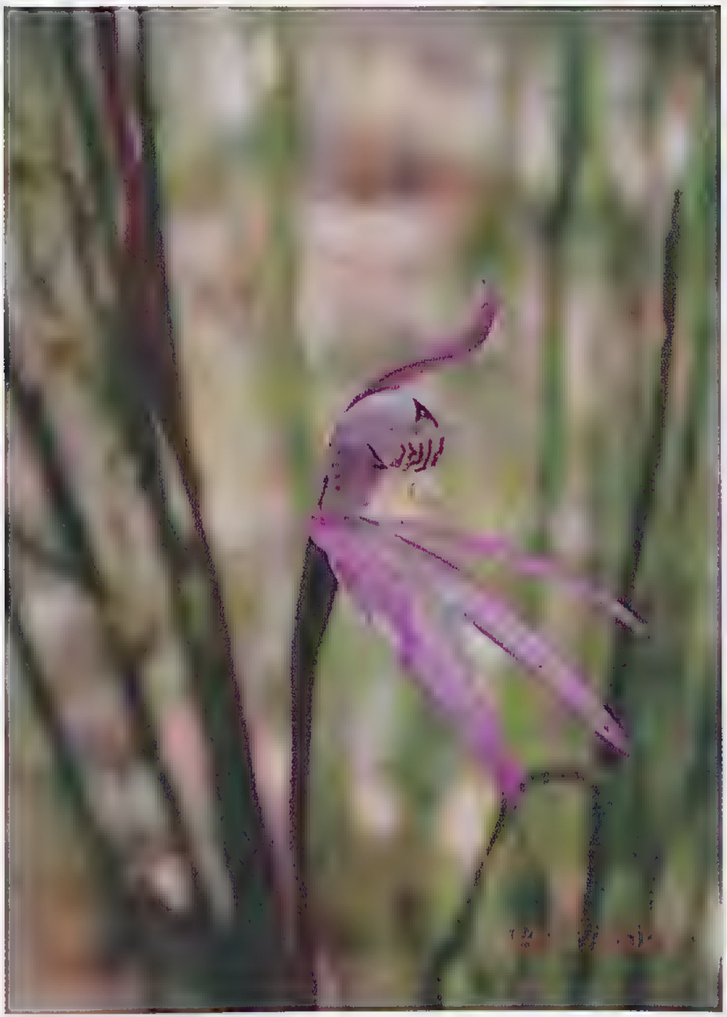
Threatened Plants Tasmania Group Projects

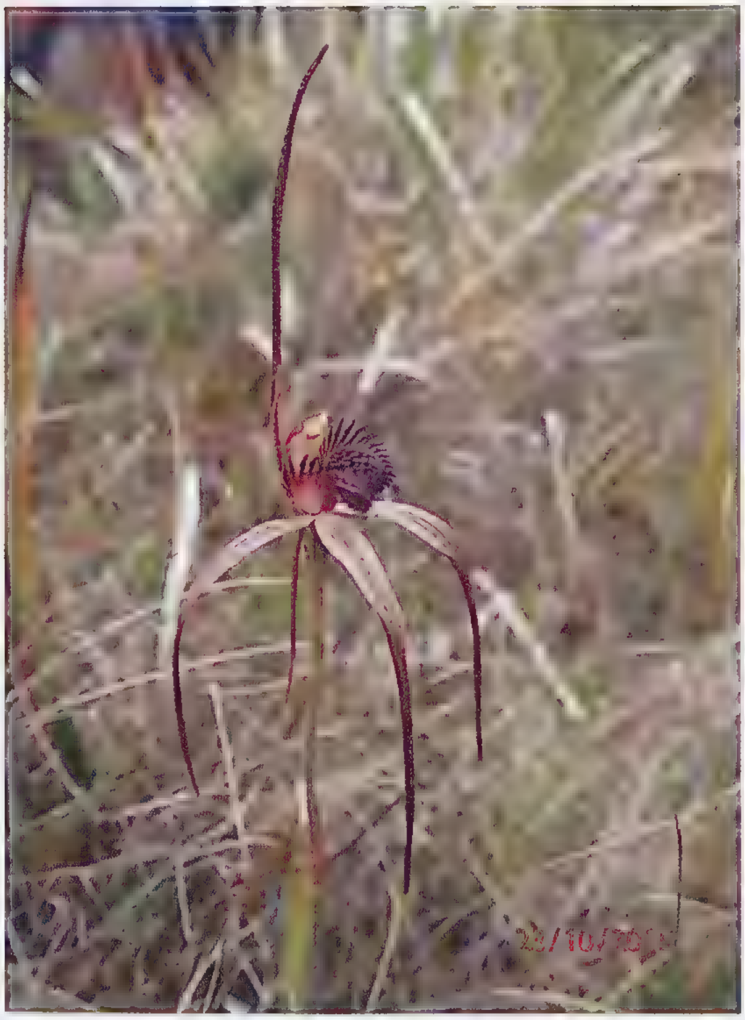
The extended dry spell in Tasmania has confirmed that orchid emergence and flowering is adversely affected by dry weather, and TPT's long term monitoring projects confirm this, with low numbers of plants recorded at most sites.

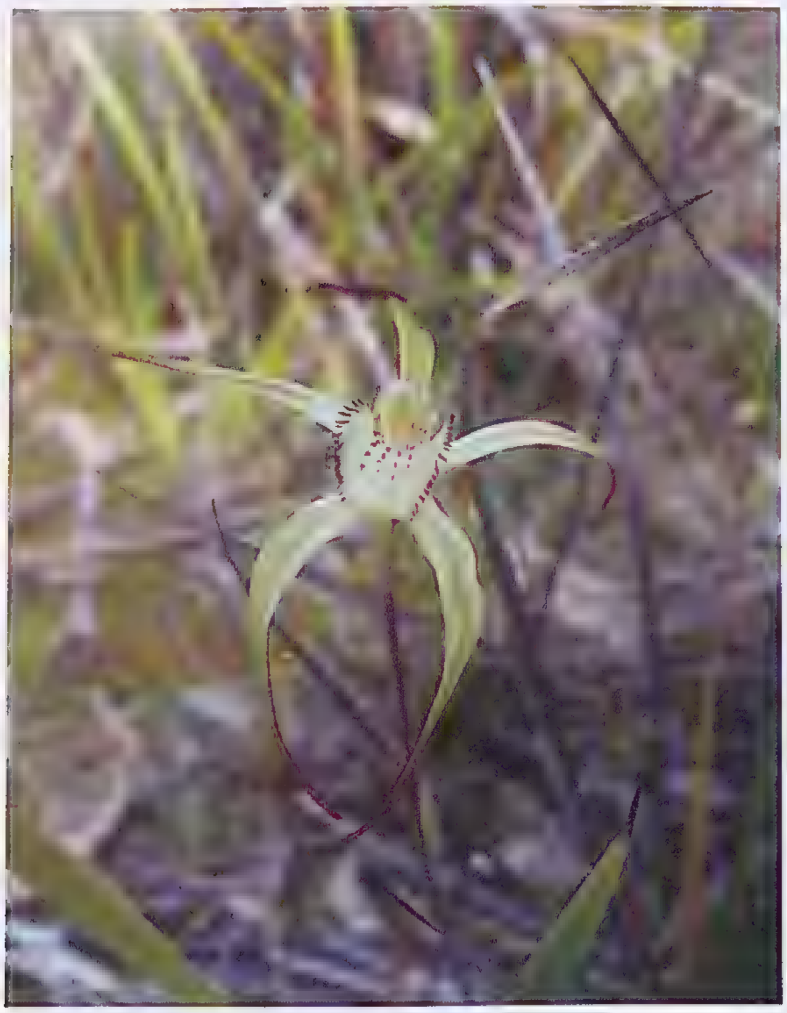
The exception was Henry Somerset Conservation Area (HSCA) at Latrobe, where the critically endangered *Caladenia tonellii* (robust fingers) produced the most flowering plants since monitoring began in 2009. HSCA is a privately owned area set aside and managed by the owners Forico for its diverse flora values. It is the type location and main population for *Caladenia tonellii*. A transect was set up in 2009 to monitor populations, and the high flower count is mostly due to one half of the transect being burnt in autumn 2013 and the other half in 2014, creating ideal flowering conditions. Results indicate that burning encourages flowering, but the cleared understory also encourages grazing of the flower stems. It is estimated one quarter of plants flowered, putting the population estimate of 150 plants attempted to or flowering as good news.

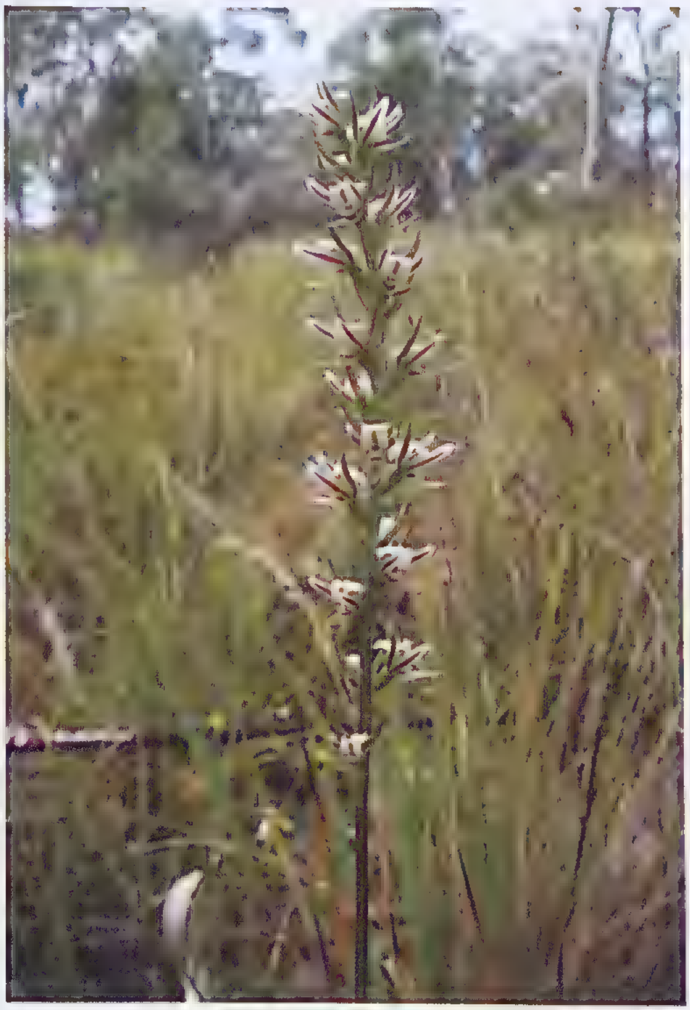
HSCA also contains a transect to monitor *Caladenia caudata* (tailed spider orchid). The transect has remained undisturbed for many years, and flowering plant numbers have fallen each year. In 2015 no flowering plants were seen in the transect and low numbers seen across the park, but Forico plans to burn the area this year as part of its ongoing management.

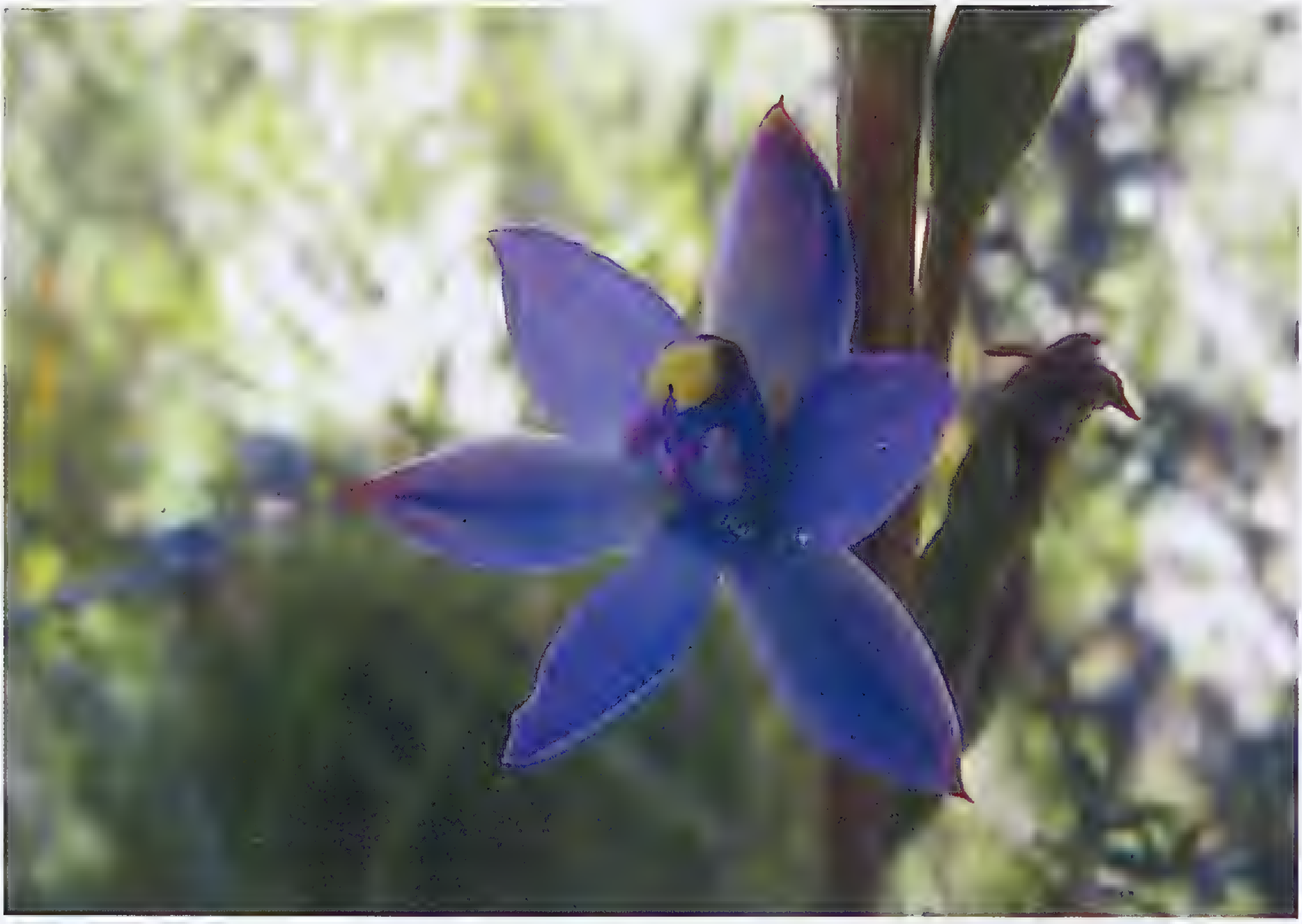
Thelymitra atronitida (blackhood sun orchid) is known from only a few sites in Tasmania, one being an overgrown remnant bush block in suburban Hobart. Until recently the privately owned block was prime for development. Fortunately an agreement was reached that allowed the owner to develop a section of the block, with the remainder handed over to the local council as a reserve. I coordinated a survey of the block in 2014 and found a number of unrecorded


Caladenia tonellii

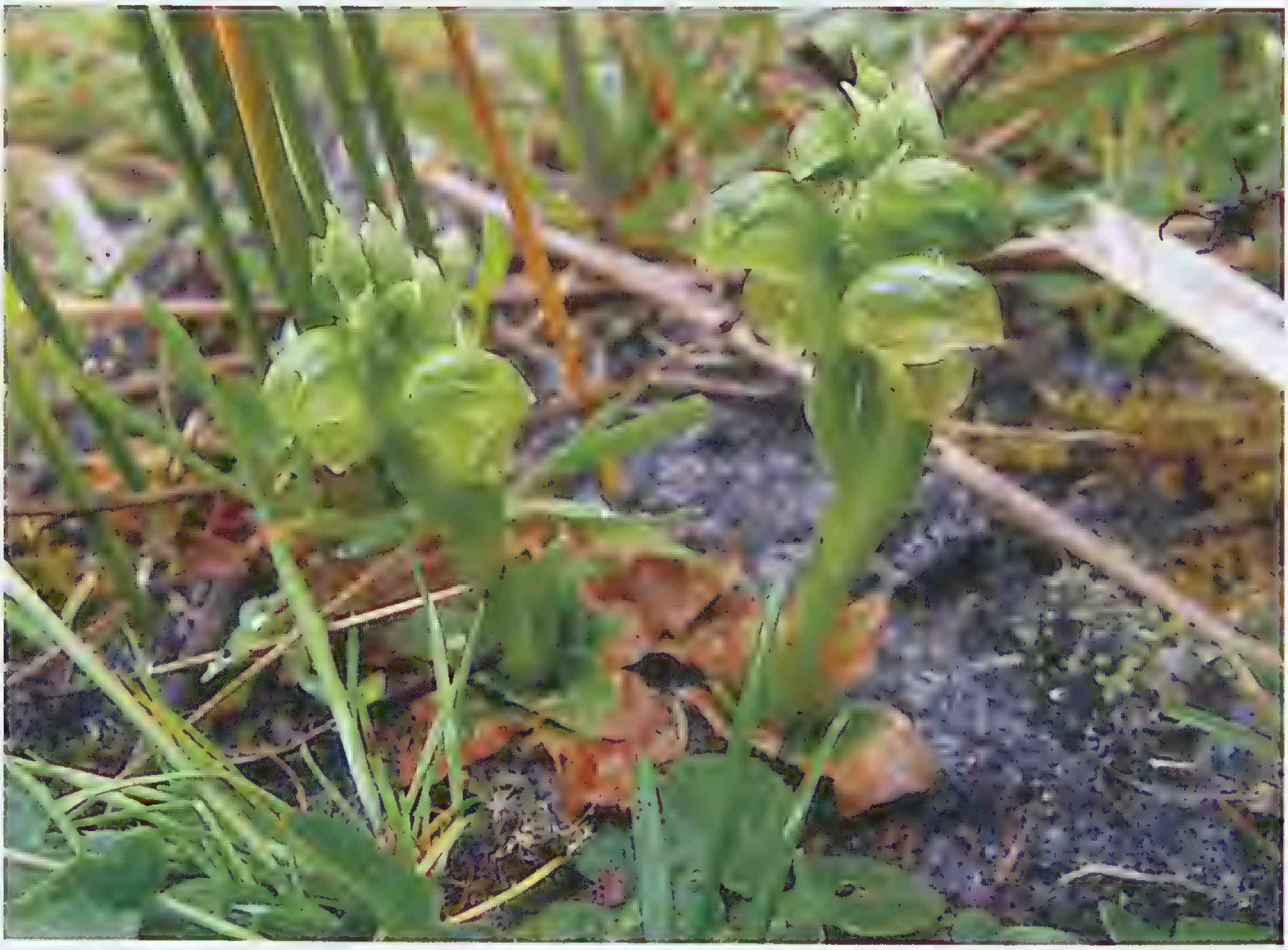

Caladenia dienema


Caladenia saggicola


Prasophyllum milfordense



Thelymitra malvina



Pterostylis rubenachii

plants had sprung up in the cleared firebreak between the reserve and the housing subdivision, including some plants growing inside one of the new house blocks. I led the follow up survey in 2015 but the dull weather conditions on the day didn't allow for any of the sun orchids to open so most flowers needed some gentle assistance to reveal their identity. We were only able to locate one flowering plant, and given that there were a number of plants in fruit at the same GPS location as a group of plants that were recorded last year, it would seem this year's survey may have been a week late. Our day wasn't wasted however, as our survey revealed a good number of orchids including the first few open *Caleana major* (flying duck orchid) and lots more buds, similar numbers of *Paracaleana minor* (small duck orchid), a number of *Calochilus platychilus* (purple beard orchids), a few *Caladenia alata* (fairy fingers) and both the green and darker red *Prasophyllum concinnum* (trim sun orchid), proving once again what an important orchid rich area this is.

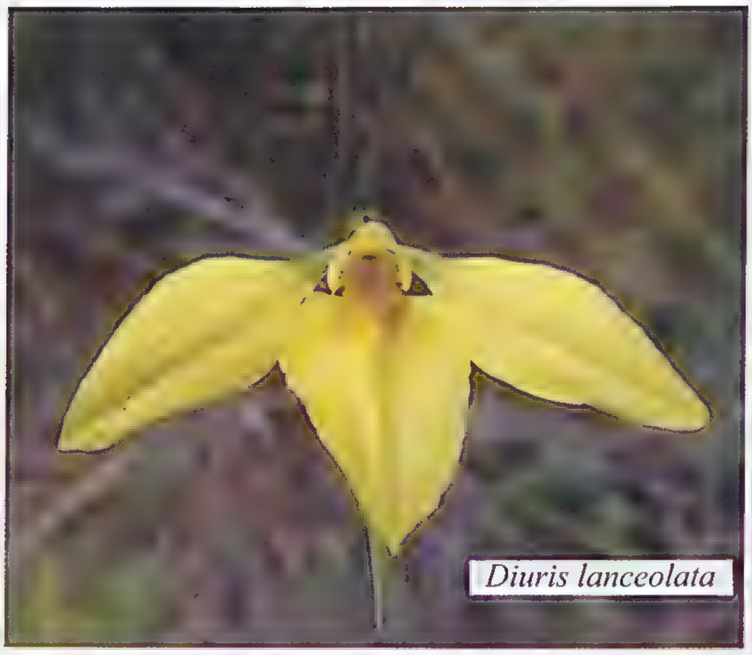
A TPT field trip to an area burnt in 2014 at Coles Bay to survey for *Thelymitra atronitida* (blackhood sun orchid) and *Thelymitra malvina* (mauvetuft sun orchid) found flower numbers were down from pre burn counts but confirmed that both species had recovered well. No plants were recorded the first year after the burn, suggesting that recovery may only be evident after a few seasons. The group was fortunate to have a visiting *Thelymitra* expert, Lars Nauheimer from James Cook University, join the field trip and take collections for his research which is using next generation sequencing to understand the evolution of *Thelymitra* and maybe resolve taxonomic questions about these two species.

The Campbell Town Golf Course is a significant site for threatened species, including herbs, shrubs and three orchid species, *Prasophyllum incorrectum* (golfers leek-orchid), *Prasophyllum olidum* (pungent leek-orchid) and *Caladenia anthracina* (black tipped spider-orchid). TPT has a long term monitoring project and an established transect for *Prasophyllum olidum*. Despite checking the transect, known plant GPS locations and a general walk around, no plants were found again this year, the poor result attributed to the extremely dry season. As part of the Threatened Flora Link, a Green Army team was also onsite attacking a significant gorse problem and erected new signs highlighting the threatened species values on the course.

Volunteer members assisted James Dick from Forico, the owners of Westwing Plain, at their Surrey Hills Forestry Estate to install individual cages on a random selection of *Prasophyllum crebriflorum* (crowded leek-orchid) plants. The cages were made on site from discarded chicken wire and secured by metal stakes. The aim was to see whether cages will reduce the high level of grazing during the growing season. While installing the cages, emerged leaves and vegetation height were measured. The grassland vegetation height surrounding the orchid does not significantly affect whether plants emerge, but it was found the height of the vegetation plays a significant role in protecting the plant from grazing. The caged plants were much less likely to be grazed than uncaged plants, resulting in far greater numbers of plants reaching flowering stage.

Volunteers assisted Dr Richard Schahinger from DPIPWE for the seventh year of monitoring *Caladenia saggicola* (sagg spider orchid), known from only one site on private property near Hobart, where a transect was established in 2006 and is rescored annually. Counting didn't take long this year, with only 57 flowering plants found, down from 428 in 2014. The same property is also home to *Prasophyllum milfordense* (milford leek orchid) which has been monitored since 2009. Only 13 plants were found this year, the lowest number of flowering plants since monitoring began. This is probably due to the dry winter and spring, with most of the plants smaller than usual.

Members from Hobart turned the November Hobart Show long weekend into an extended orchid hunting trip. We joined a survey for threatened *Caladenia lindleyana* (lindley's spider orchid) and *Caladenia pallida* (rosy spider orchid) on private property in the Midlands. The area was very dry but seemed ideal after a burn last year. *Caladenia carnea* (pink fingers), *Caladenia clavigera* (club spider orchid) and *Diuris pardinia* (leopard orchid) were reasonably common, but neither of the target species was seen. Dr Nigel



Diuris lanceolata

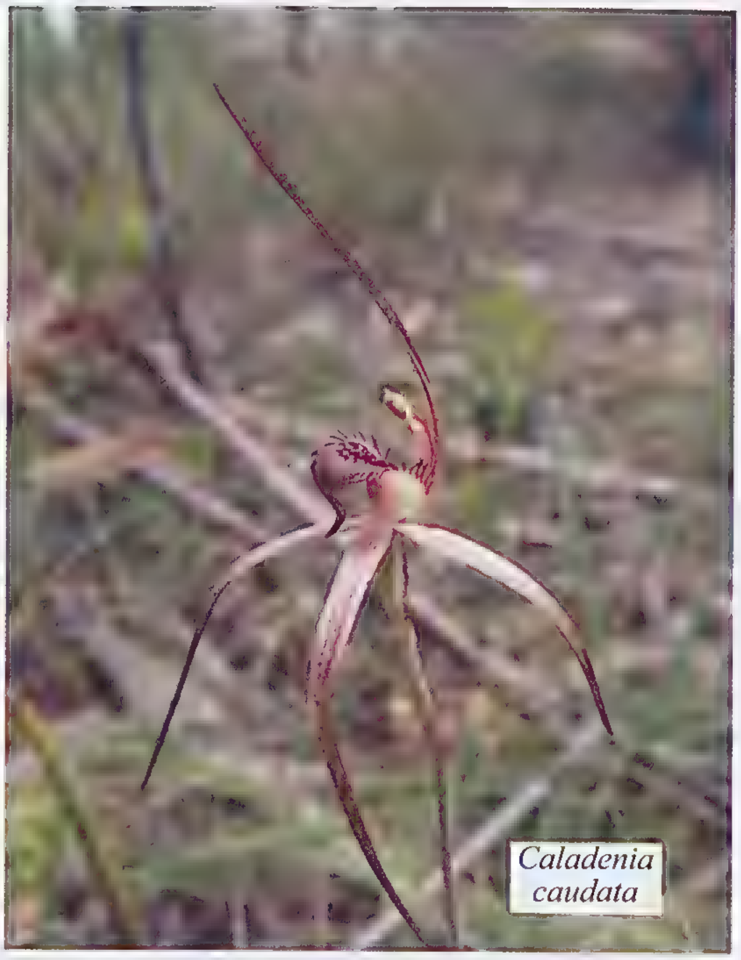
Geoff has a mechanical engineering background. He lived on Cape York in the 1970s, where he often found dendrobiums in the bush, but his main focus has shifted to the conservation of terrestrial orchids.

Swarts collected some spider orchid flowers and caught their pollinators for later identification.

As the group travelled towards Arthur River, the different species we passed were collected and a trial was conducted by setting the collected flowers in an open area, waiting for the pollinator to arrive and recording which flower they were attracted to. The pollinating wasps are attracted by a pheromone emitted by the flower. I was surprised how quickly the wasps appeared once the flowers were set out, and they would be clearly attracted to one flower over the others. The pollinators are small agile male wasps and Nigel entertained the group as he attempted to catch them in his butterfly net for later identification.

Arthur Pieman Conservation Area (APCA)

This area has recorded human habitation for millenia, and differs from typical Tasmanian west coast habitat as it has been shaped by fire, resulting in an area that contains many threatened orchid species. Over the weekend we had a full programme, starting with a survey of the 2 known populations of *Prasophyllum* sp. Arthur-Pieman, discovered by a local family in 2012. We measured the physical attributes of the plants for formal identification and provided the measurements in the new species formal description. This new species differs markedly from all other species of *Prasophyllum* by its unornamented and entire labellum, an elongated anterior lobe of the column, and pollinia that readily fragments. Its single waxy yellow colour makes it very difficult to photograph.



Caladenia caudata

We searched a known area for the endemic and endangered *Diuris lanceolata* (large golden moths), without much success, finding only a few flowering plants in poor condition due to the dry conditions and the site becoming overgrown. A survey of the two sites for *Pterostylis rubenachii* (arthur river greenhood) confirmed that the coastal population is doing very well, but inland sites have become overgrown from lack of a disturbance, and only a few plants were found. This is an ongoing trend, so I'm hopeful the bushfires that swept through the area earlier this year burnt some of the areas that needed it.

As part of an ongoing study of the *Caladenia patersonii* complex, we surveyed likely and known sites for *Caladenia dienema* (windswept spider orchid) and *Caladenia patersonii* (paterson's spider orchid), in areas that have been burnt in recent years. Flower numbers were down, proving that even the west coast of Tasmania is in the grip of a long dry period. Over the weekend, evening workshops were conducted by Phil Collier from Rubicon Sanctuary on *Thelymitra* identification, and Mark Wapstra from ECOtas expanded our knowledge of the *Caladenia patersonii* complex, and how *C. patersonii, C. dienema, C. echidnachila, C. anthracina* and *C. helvania* fit together.

It wasn't all doom and gloom, as we did find *Diuris palustris* (swamp diuris) growing in an unusual location, and although not an orchid, one of our eagle eye volunteers discovered a population of *Aphelia gracilis* (slender fanwort) a grass-like annual herb that likes damp, sandy ground and wet patches. The find resulted in a 165 km range extension, as it was previously only known from the Midlands and north-east of the state. A trip to APCA in spring isn't complete without finding the green variety of *Calochilus paludosus* (strap beard orchid), known only from the Arthur River area. It was amongst the list of about 30 species we saw for the weekend.

Sarcochilus australis project

A group of volunteers coordinated from the Tasmanian Native Orchid page on Facebook are doing great work rescuing seedlings of *Sarcochilus australis* (gunn's tree orchid) that have fallen off their host, and reattaching them to the trunk of a suitable host tree. Indications are that most of the seedlings rescued last year have survived and are growing well. This is a true volunteer project to secure one population of Tasmania's only epiphytic orchid. The other good news is the discovery of rare *Pterostylis grandiflora* (cobra greenhood) on the site last year. The first surveys mapping and recording the extent of the population is revealing this as a major site for the species, and possibly the largest recorded population.

Royal Tasmanian Botanical Gardens

It has been a successful year in the laboratory and nursery where Dr Nigel Swarts and Dr Magali Wright are overseeing work on the Orchid Conservation Program. The outcomes of this year's trials, which tested a range of different potting media and introduced different biocontrol agents for fungus gnat, have led to much higher re-emergence rates for orchid seedlings after their first summer dormancy. *Caladenia saggicola, Pterostylis ziegeleri* (grassland greenhood) and *Prasophyllum olidum* seedlings are now strong one year olds. *Prasophyllum olidum* and *Prasophyllum incorrectum* (golfers leek orchid) are already deflasked and four other species will be potted out over the coming months. Magali, Nigel and some of the volunteers have taken time out to work with film maker Sarah Abbott to produce a short video highlighting their work which can be viewed at:
https://www.youtube.com/watch?v=66PPlRk62zc&feature=youtube

This is a snapshot of the orchid work being undertaken in the state. I encourage anyone wanting to learn more about Tasmanian orchids to become involved or contact me for more information.

Further Reading

Link to *The Little Book of Common Names for Tasmanian Plants* by H & A. Wapstra et al. with 2009 addendum, this sets the convention for common names used in this article:
http://dpipwe.tas.gov.au/conservation/publications-forms-and-permits/publications/little-book-of-common-names-for-tasmanian-plants

Link to *A Census of the Vascular Plants of Tasmania, including Macquarie Island.* MF de Salas & ML Baker. 2015:
http://www.tmag.tas.gov.au/collections_and_research/tasmanian_herbarium/tasmanian_herbarium_publications

Link to Threatened Flora Link:
http://nrmsouth.org.au/wp-content/uploads/2016/03/TFL-case-study_v2.pdf

Listing Statement link:
http://www.environment.gov.au/cgi-bin/sprat/public/publicthreatenedlist.pl?wanted=flora

Link to RTBG page on the research being undertaken at the gardens:
http://gardens.rtbg.tas.gov.au/science-research/orchid-conservation-and-the-rtbg/

Link to the case study on the broader threatened flora project:
http://8726-presscdn-0-66.pagely.netdna-cdn.com/wp-content/uploads/2016/03/TFL-case-study_v2.pdf

Link to Tasmanian Native Orchid Facebook page
https://www.facebook.com/groups/447398148693222/

Thelymitra fragrans D.L. Jones and M.A. Clem., or a New Species?

Text and photographs by Graham Corbin
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Summary
Thelymitra fragrans, a relatively recently described species, is a spring flowering lithophyte which grows almost exclusively in *Dendrobium kingianum* roots. The plants growing at Springbrook National Park show some differences from *T. fragrans*. They flower in early autumn, with plants becoming deciduous before the typical spring flowering period. More investigation is required to determine if this is a new species.

Orchids never cease to amaze me with their diversity, variability and how little we really understand them. While we know a lot about Australian orchids, much is still to be discovered and learned. I have discovered this with *Thelymitra fragrans*, a relatively newly described species of sun orchid. It was first discovered by John Roberts and Danny Ross in the mid 1980s. They were searching for *Dendrobium kingianum* in flower near Pat's Bluff just north of O'Reilly's, at Lamington National Park on the Queensland – New South Wales border, when they saw a pinkish *Thelymitra* flowering among *D. kingianum*. They were used to seeing blue *T. ixioides* in the area but the pinkish *Thelymitra* took their eye. Being unable to identify it, they contacted David Jones who was living nearby. David could also not identify the orchid so he returned with Colin Harman to collect some specimens. The orchid was very similar to *T. nuda* except that it grew in an entirely different habitat, had lax leaves as opposed to the stiff upright leaves of *T. nuda*, and the hair tufts on the column arms formed a ball, unlike the upright toothbrush-like tufts of *T. nuda*. This species was previously known, but confused with *T. nuda*. David Jones and Mark Clements formally described this species as *Thelymitra fragrans* (*Austrobaileya* 2(5) p. 550, 1988).

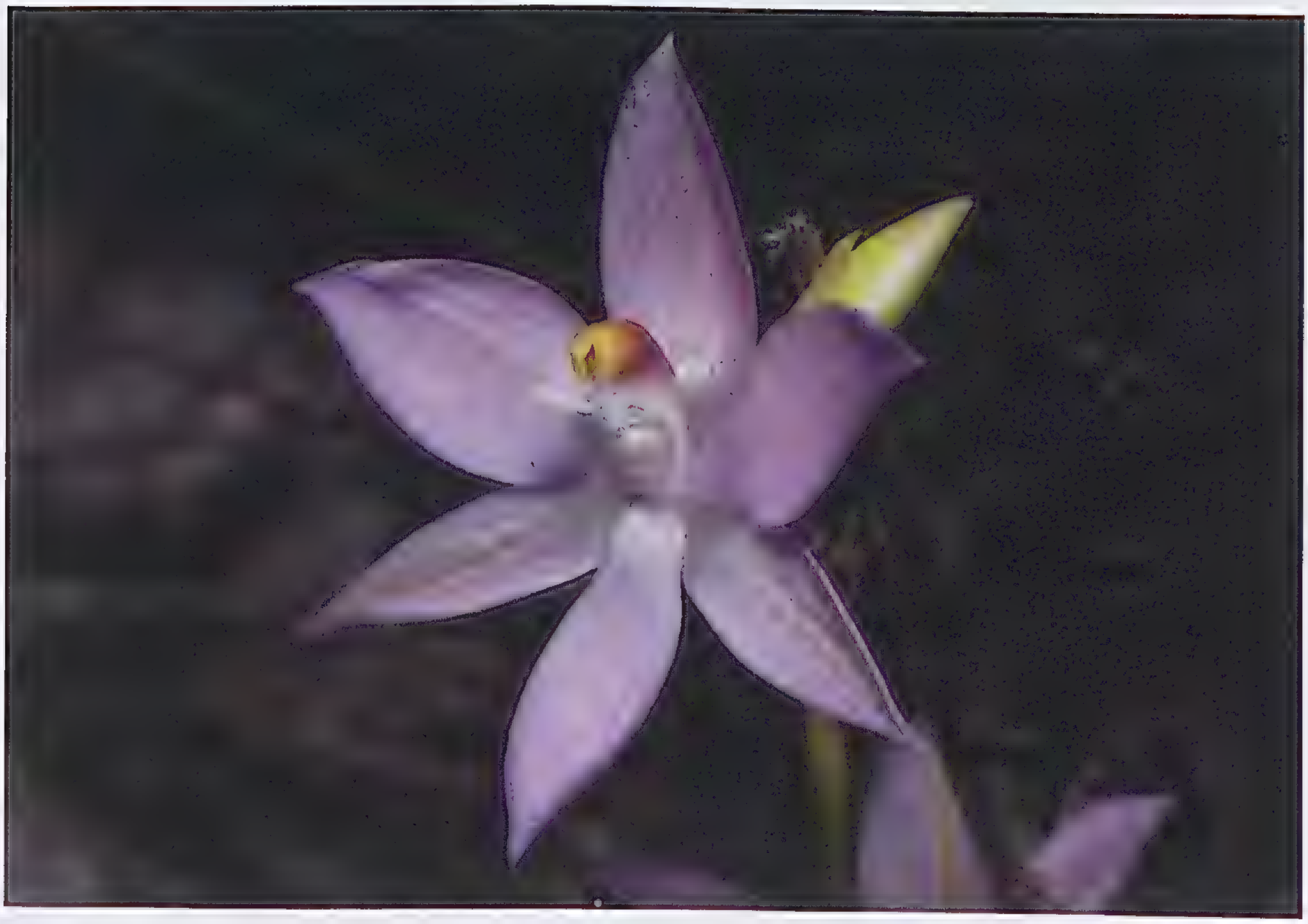
I found my first *T. fragrans* in the wild back in 2008. It was growing amongst *D. kingianum* in D'Aguilar National Park just to the west of Brisbane. There were a number of plants in bud but unfortunately none with open flowers. The location was a long strenuous day's walk from the nearest road, but despite this, I visited most weekends for the next few weeks. However I never saw the orchid flowers open. I had read about blowing hot air onto partly open *Thelymitra* buds in Western Australia to encourage them to open, so I tried this technique to avoid yet another long day's hike. After blowing on the buds in my cupped hands for what seemed like an eternity, I just proved that by doing this you stand a strong chance of passing out, with the *Thelymitra* bud just as closed as when you started. I returned to see these plants in 2009 but despite a number of visits, I again only saw buds. Not a good start for my observations.

In March 2012, I visited Springbrook National Park, half way between the Gold Coast and Lamington National Park. I found a single *Thelymitra* plant with a lax leaf growing amongst swampy reeds, with two pinkish-blue flowers well past their prime. After hitting the books, I decided that this must have been a very, very late flowering *T. fragrans*. I had some difficulty with this identification, as this species only grows on rocks amongst roots of *D. kingianum*, or occasionally *D. speciosum*. *Dendrobium kingianum* was growing within ten metres of this orchid so the identification was still plausible but unlikely in my opinion.

I did not get back to Springbrook until March 2014 to search for *Thelymitra*, and found dozens of flowering plants spread over a few kilometres. They were mostly growing in *D. kingianum* roots, but a few were growing and flowering low in tea tree (*Melaleuca*) forks, on grass trees (*Xanthorrhoea*) or in swampy reeds. According to the books, *T. fragrans* is a lithophyte growing in *D. kingianum* or *D. speciosum* roots, from the Hunter River in central New South Wales north to Carnarvon Range and Blackall Range in southern Queensland. Atlas of Living Australia records it from North Queensland on Cape York. Flowering is August to October. March is not the time for spring flowering plants to be in flower.

I returned to Springbrook in August and November 2014 expecting to see the *Thelymitra* in flower at the same locations, but there were no sign of the plants, not even leaves. I returned to

Thelymitra species flowering amongst *Dendrobium kingianum* at Springbrook



Close up of *Thelymitra* species flower

view this strange population in late February and early March for the last three years but found no signs of the plants or leaves in August to October when these orchids should be flowering according to the books. The Springbrook plants flower exclusively in autumn and I have never found any plants, flowers or leaves in spring. I have also visited a population of *T. fragrans* in northern New South Wales in both spring and autumn, and have confirmed the orchids there flower in spring but not in autumn.

Where does that leave me with this population of autumn flowering *Thelymitra*? I have photographed many different plants over a number of years and the plants match the type description of *T. fragrans* reasonably well. Most plants grow on rocks in *D. kingianum* roots, and plants always have lax leaves. Flowers are pinkish-blue with a yellowish post anther lobe with a deep cleft. Some flowers will stay open at night, as with *Thelymitra fragrans*. I have found that the column arm hairs are reasonably variable, even on different flowers on a single plant, but more often than not the hairs form a ball and are not toothbrush-like as in *T. nuda*. I cannot differentiate the plants or flowers growing in northern New South Wales compared to those at Springbrook except by the time of flowering.

I will continue to monitor this population. In the meantime, I will continue to enjoy them, especially knowing that these orchids are a little bit different. Orchids are amazing plants.

Note: Geoff Jeanes, a specialist of the *Thelymitra* genus, has examined the photographs and notes a different, more inflated column with less bi-lobed shape of the post-anther lobe than in *T. fragrans*. He suggests examination of fresh material from a number of different locations, as this may be a separate species.

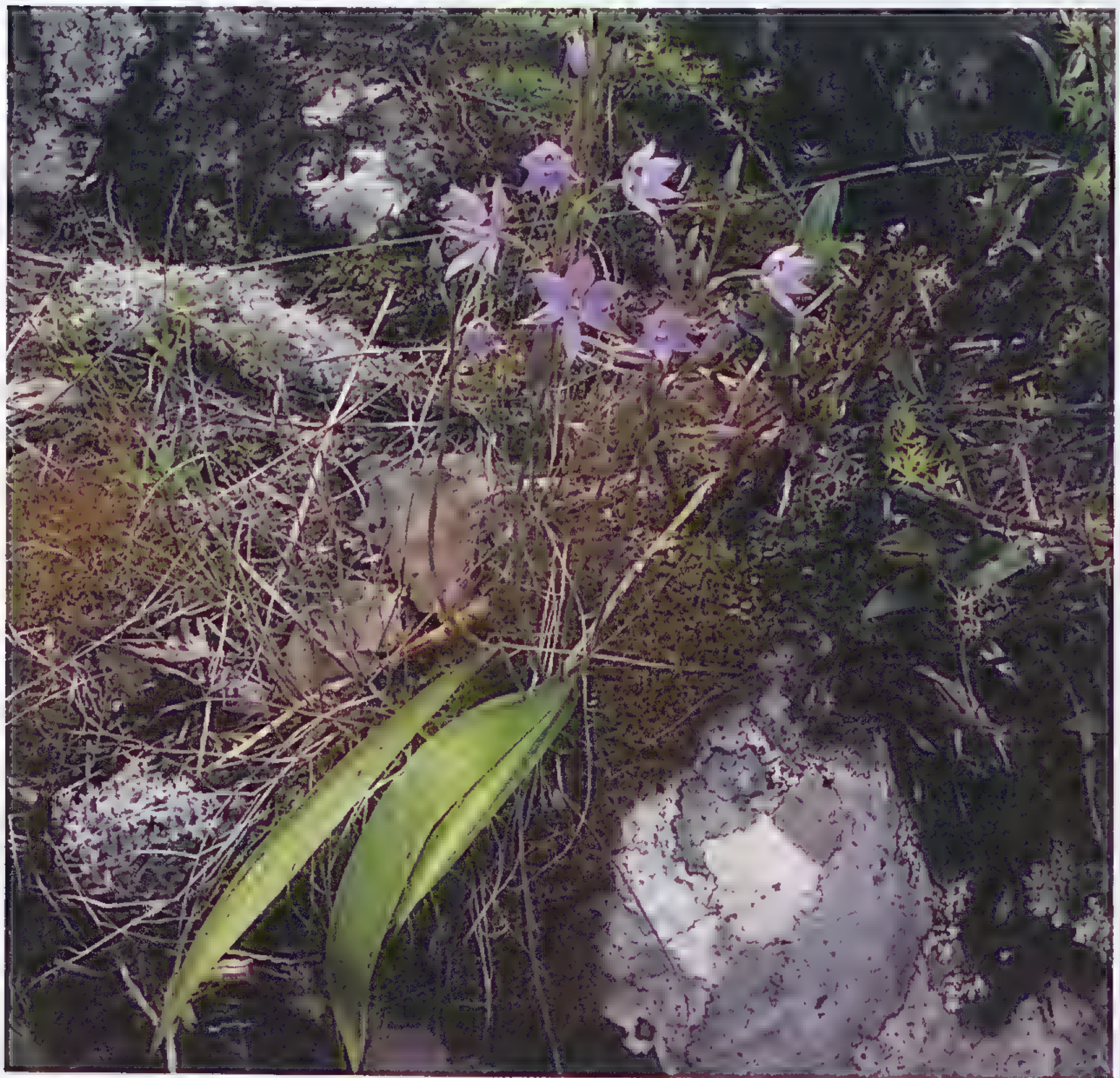
References

Bishop T (2000) *Field guide to the orchids of New South Wales and Victoria*. University of New South Wales Press, New South Wales.

Jones DL (2006) *A complete guide to native orchids of Australia*. New Holland Publishers, New South Wales.

New South Wales Flora Online: http://plantnet.rbgsyd.nsw.gov.au

Graham is President of ANOS Kabi Group and an ANOS associate judge with a keen interest in terrestrial orchids.



Thelymitra species at Springbrook showing lax leaves

Dendrobium bigibbum var. *superbum* 'Maya's Choice'

Tony Clarke and John Larkey

This beautiful specimen plant was benched by John Larkey at the Newcastle ANOS Autumn Show 16–17th April 2016, where it was awarded Grand Champion. What is remarkable about this plant is that it is not grown in a glasshouse. Newcastle has a temperate climate with frosts away from the coast, and plenty of winter rain which is not conducive for growing orchids from North Queensland. In fact these weather conditions will quickly kill such orchids.

Notes from John Larkey

This plant was grown from a seedling which I obtained from Mick and Beryl Ling 5 years ago. It was among a batch of 50 seedlings that needed special growing attention, so Mick and Beryl sold them to me. I believe Mick purchased them from a nursery in Kulnura and originally this plant was labelled *Dendrobium lithocola* 'Alba' x self. I was advised by the judges that saw this plant in flower that it was *D. bigibbum var. superbum.* After winning Judges Choice at a Boolaroo Orchid Society meeting in April 2014, I exhibited it at a Newcastle Orchid Society meeting where it was awarded Popular Vote–Novice and Judges Choice–Species. In April 2016 it won Voters Choice at Boolaroo Orchid Society.

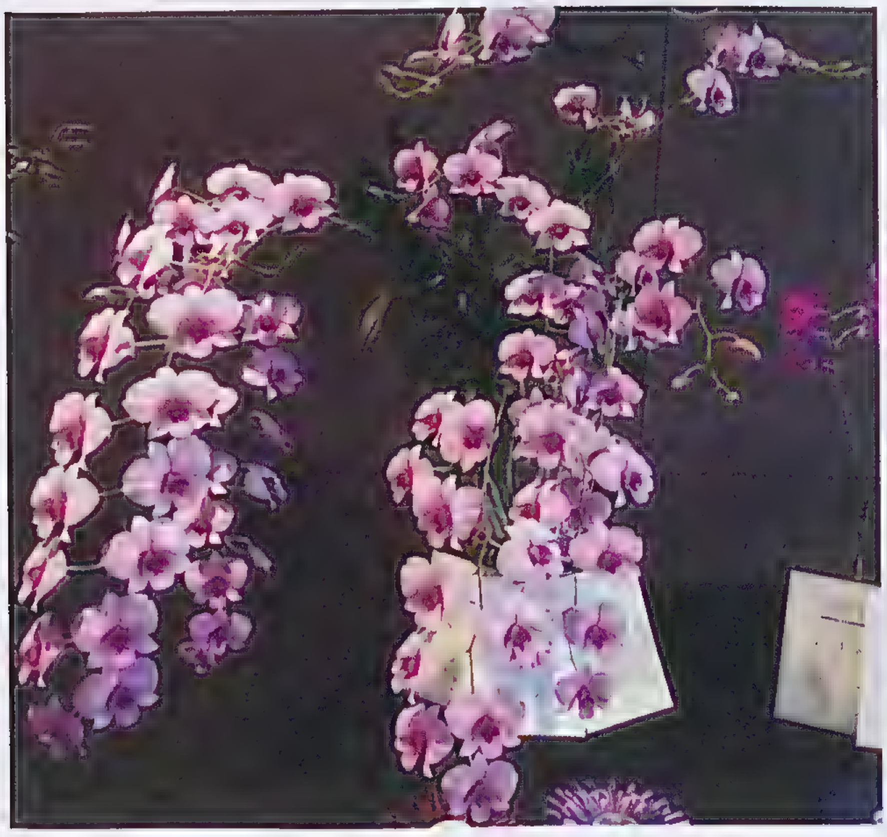
I grow it in a mixture of treated pine bark nuggets, small and medium size. When repotting I try to place the plant up on top of the bark so the roots can grow over the bark before growing down into it, and plant stems usually need staking for support. The best time to repot is around September, just before new growths appear in October–November.

When I water, I always use a very light fertiliser dosage first thing in the morning, so the foliage will dry out by midday. Wet foliage overnight is a big NO NO. The main thing is not to water *D. bigibbum* plants through the winter months, from about Anzac Day to the October long weekend.

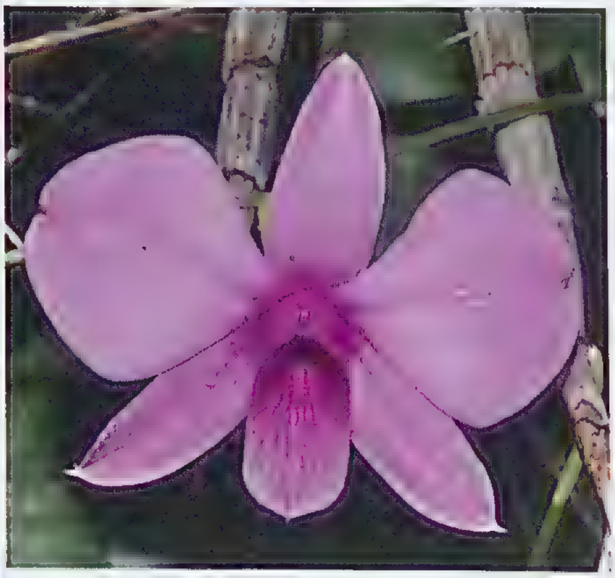
My plants are grown in a back porch area under polycarbonate roofing with plenty of air movement, where the plants get early morning sun and even full sun early in the morning for a couple of hours in winter. As the old saying goes "beauty is in the eye of the beholder".

Editor's Note: The varieties of *Dendrobium bigibbum* used in breeding are often misidentified. This plant is consistent with *D. bigibbum* var. *superbum*, and I have added a photo of a natural *D. bigibbum* var. *superbum* for comparison.

John Larkey has been an enthusiastic grower of Australian orchids for many years.



D. bigibbum var. *superbum* 'Maya's Choice'



D. bigibbum var. *superbum* Princess Charlotte Bay. Photo P. Adams

Ira Butler Award Winners 2015

Sheryl Lawson

The Ira Butler Trophy Committee was set up in 1974 by a subcommittee of ANOS to encourage the advancement of Australian orchid hybrids. Members were elected from ANOS and the Orchid Society of New South Wales for the panel. Since then the awards have expanded to include four Gold trophies: two for Australian species and hybrids, and two for Australasian species and hybrids, and the awards are highly sought. Further information about the background of the trophies and their namesakes, as well as information on eligibility and how to apply for the awards, can be found on the websites www.anos.org.au and www.irabutlertrophy.org .

The Chairman of the Committee, Alan Stephenson, reported that there were 66 entries in total in 2015. As the awards are judged on the photographs provided, entrants are strongly encouraged to ensure that they have the full number of high quality photographic views requested.

ANOS Council encourages all members who have eligible plants to participate in this competition in 2016. Congratulations to this year's winners, who have provided some notes on their plants.

Ira Butler Trophy 2015 for Champion Australian Native Orchid Hybrid of the Year

Sarcochilus Serenade 'Lots of White' HCC/ANOS owned by David Butler. Notes by D. Butler.

It is most satisfying for my plant to receive the Gold Ira Butler as I was both grower and hybridiser, and especially so with a plant whose flowers could be simply described as white with a scattering of spots in the centre. The colour has great clarity, with the purity of the white and the sharpness of the spotting giving the plant a special quality best described as 'presence'.

In 2006 I made the crossing *S.* Yvette 'Jazzy' x *S.* Melody 'Pink Spots' and of the many offspring flowered I retained five for future breeding, each of which carried nicely arching racemes of large spotted flowers. One of these was my plant *S.* Serenade 'Lots of White' HCC/ANOS. Quality awards have also been given to siblings grown and flowered by others.

Over the years I have tried many potting mixes and have settled on a mixture of treated bark, scoria, and jumbo perlite. Proportions of each and the grade of bark depend on pot size but all ingredients are sieved to ensure drainage is perfect. I find squat pots are best and these should be large enough for two years root growth. When repotting, I separate the roots apart and remove any defective ones. Rampant root growth is then pruned to maintain a compact root ball and the new potting mix is settled in by tapping the side of the pot without applying pressure. I find early autumn and early spring the best times for general repotting and deflasking *Sarcochilus* as these times mark the start of a growth period. Obviously, choice of potting times needs to be adjusted to work around the grower's program for showing or breeding.

Silver Certificate Winners

D. Jayden 'Goodie' owned by Henk van den Berg

D. Dingadee 'Roger' owned by Wayne Perrin

D. Topaz Dream 'Sweet' owned by Grahame Young & Callyn Farrell (see notes below)

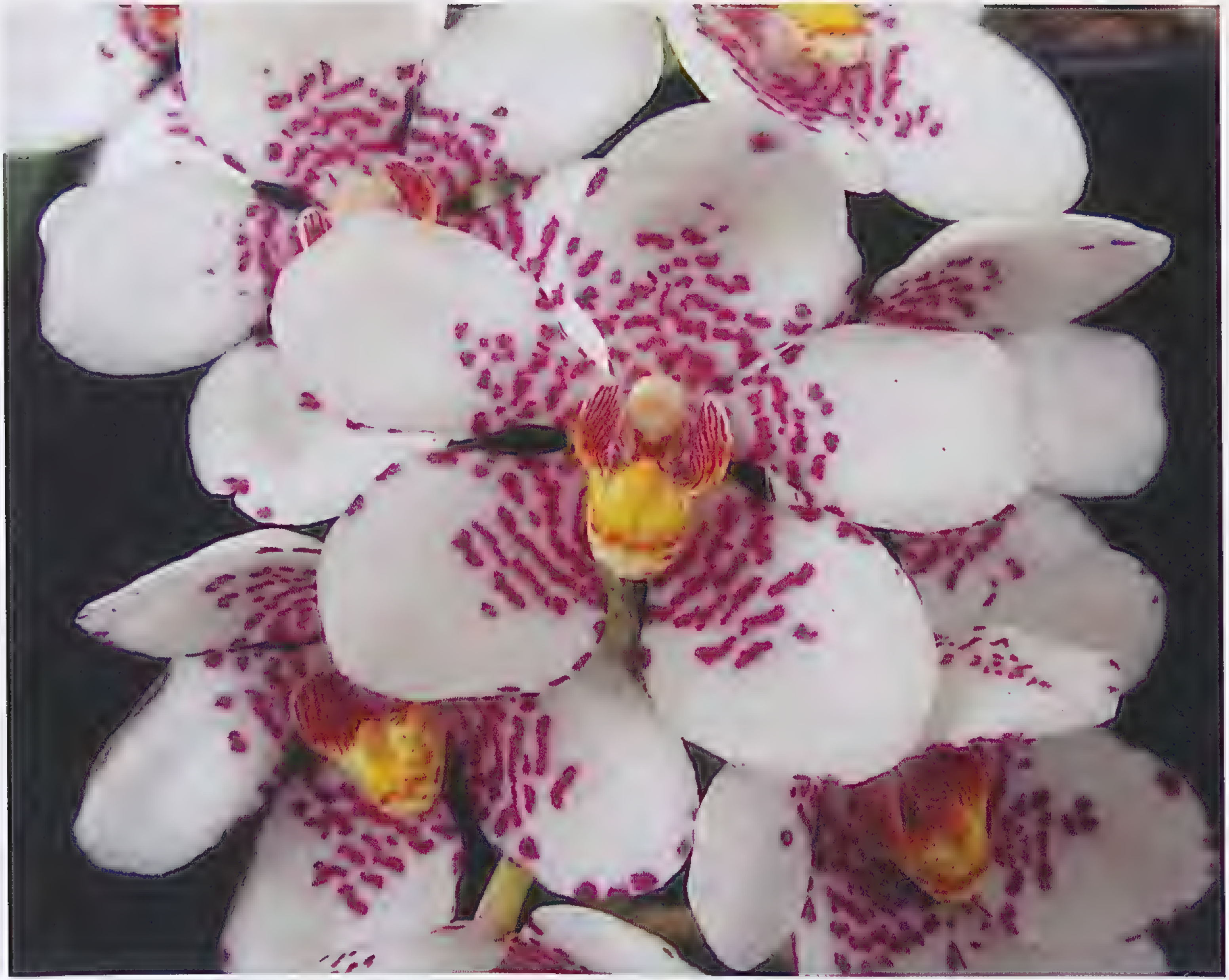
D. Edric 'Islander' owned by Eric Bailey

Sarcochilus Otways Sunset owned by John Douglas

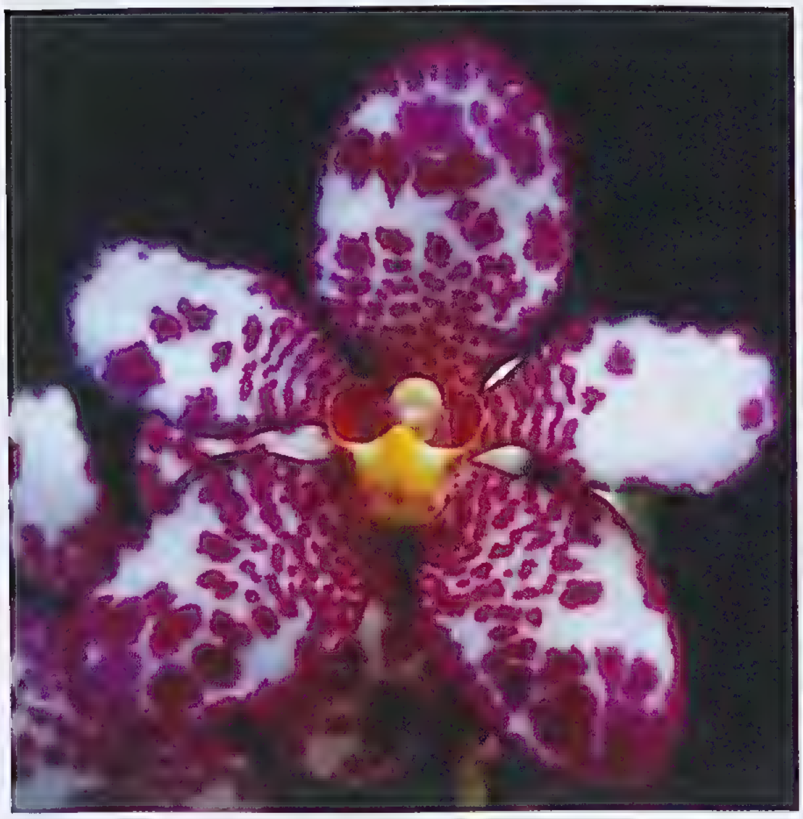
Bill Murdoch Trophy 2015 for Champion Australian Native Orchid Species of the Year

Dendrobium speciosum 'Maddison' AM/ANOS-AOC owned by Grahame Young & Callyn Farrell (Down Under Native Orchids). Notes by C. Farrell.

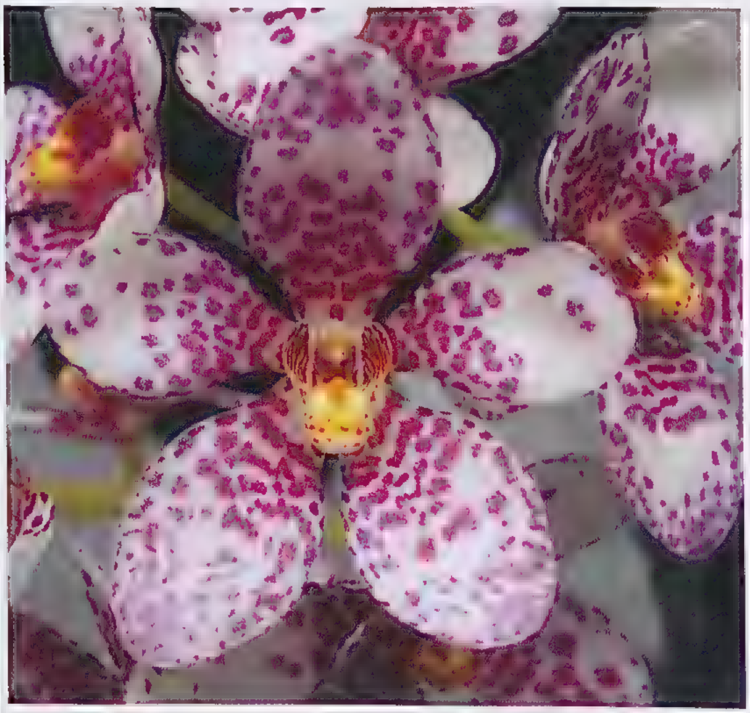
We purchased a seedling of *D. speciosum* var. *grandiflorum* 'Mt. Larcom Gold' x *D. speciosum* var. *speciosum* 'Windermere' from Brian Gerhard in 2008. It would have been two or three years old by this stage and was in a 100mm pot. In 2012 it flowered for the first time, winning its seedling class at the Kempsey Speciosum Spectacular, proving its future potential. At this show Ted



Sarcochilus Serenade 'Lots of White' HCC/ANOS Photo David Butler



Sarcochilus Yvette 'Jazzy'. Parent of *S.* Serenade
Photo David Butler



Sarcochilus Melody 'Pink Spots' Parent of *S.* Serenade
Photo David Butler

Dendrobium speciosum 'Maddison' AM/ANOS-AOC Photo Garrie Bromley

Dendrobium speciosum 'Maddison' AM/ANOS-AOC Photo Garrie Bromley

Walmsley predicted that in a few years it would receive an AM. After being repotted and divided in late 2014 this division of the plant grew extremely well and produced four new growths that season. In 2015 it flowered extremely well with five racemes, and was Grand Champion at the Newcastle Group Spring Show.

This plant grows in our main growing area on the *D. speciosum* bench, underneath 55% shade cloth and in full sun all day. It is potted in 50% Number 4 Kiwi Bark and 50% Number 3 Kiwi Bark and has always been grown in a plastic Port Pot. We try to feed a vast array of different fertilizers every month. These include Amino-Gro, GF9, EX7, Peters Excel and Plant Starter.

Silver Certificate Winners

Chiloglottis trapeziformis owned by Les Nesbitt

Sarcochilus falcatus owned by David Butler

Liparis swenssonii owned by Geoff and Lucy Spear

D. teretifolium owned by Noel Oliver

D. speciosum var. *curvicaule* 'Palmerston Mist Matilda' owned by T & W Walmsley

G Hermon Slade Trophy 2015 for Champion Australasian Native Orchid Species of the Year

Dendrobium polysema 'Twist in the Tail' owned by Craig and Graeme Scott-Harden. Notes by C. Scott-Harden.

When the plant was awarded it had 18 well formed flowers on a single raceme. The stand out feature compared to others of this species is the flat labellum. The normal form for the lip is for it to be pinched with the central lobe furling in on its self. It also displays good strong colour, the presentation is excellent, with each bloom displaying itself well without crowding. Flowers are 55mm horizontally and 46mm vertically, raceme length is 320mm. The plant had 4 mature pseudobulbs at the time of flowering and 5 smaller

Dendrobium Lauren 'Holly Chief' HCC/ANOS-AOC Photo Bill Dobson

Dendrobium polysema Photo by Craig Scott-Harden

bulbs, the tallest bulb stood approx 550mm high. One of the leaves did display some insect damage.

G Hermon Slade Trophy 2015 for Champion Australasian Native Hybrid of the Year

Dendrobium Lauren 'Holly Chief' HCC/ANOS-AOC owned by Grahame Young & Callyn Farrell (Down Under Native Orchids). Notes by C. Farrell.

This cross is *D.* Rosemary Jupp x *D.* Aussie Phil and was bred by the previous owner of Down Under Native Orchids, Brian Gerhard. We purchased this division of the plant in 2010 and since then it has proved its potential. In 2015 it produced more flowers than ever and the racemes individually had a higher flower count. It was Reserve Champion Hybrid at the 2015 Kempsey Speciosum Spectacular and this is where it also received awards from ANOS and AOC.

It is grown in our tunnel house under 50% black shade cloth. It grows in our *Dendrobium* mix which is made up of 75% number 3 Kiwi Bark and 25% coarse perlite.

Dendrobium Jayden 'Goodie' AM/ANOS 2015 Silver Certificate

Ira Butler Trophy Silver Certificate

Dendrobium Topaz Dream 'Sweet' owned by Grahame Young & Callyn Farrell (Down Under Native Orchids) (not pictured here).

Grahame and I were given a small piece of this plant in 2010 by a fellow Hunter area grower. It wasn't a hybrid that was readily available to us, so this gift was greatly appreciated. Last year was our first respectable flowering of *D.* Topaz Dream 'Sweet', which is *D.* Fantasy Land x *D. bigibbum.* It presented a number of lovely racemes and the flowers were very vibrant. It was Grand Champion at the 2015 Boolaroo Orchid Society Winter Show.

The plant did not grow vigorously in our conditions at first, so we moved it from the enclosed growing area to the hot house, where it began to improve its growth. Our hot house remains at a minimum of 18°C during the cooler months. The plant is grown in our special warm-growing *Dendrobium* mix which is 60% Number 3 Kiwi Bark, 20% coarse perlite and 20% 10mm river gravel.

Sheryl Lawson is ANOS Inc. Vice President, researcher and hybridist of cool growing orchids.
lawson1954@optusnet.com.au

Australian Orchid Foundation

Australian Orchid Research Volume 6
Lavarack, P.S. 'Bill'. 2011

This volume brings together six reports of AOF funded trips to Cape York between 1976 and 1989. Data collected on numerous other trips and new discoveries in the following years are also included. As well as providing the scientific data on the distribution of the orchids of the Peninsula, it gives a snapshot of the difficulties and rewards of working in those remote areas of Australia during that time Paperback. 180 pages.

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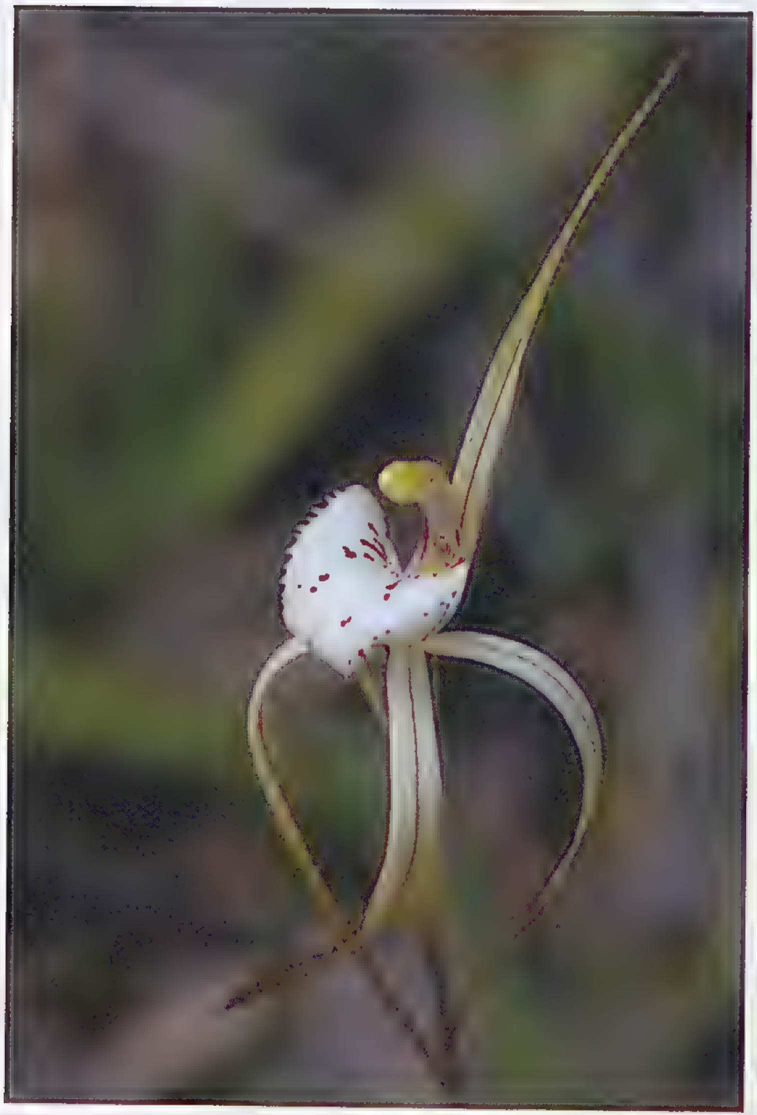
ANOS Travel Club 2016 Tour to South Western Australia

Text John Zietsch
Photographs Andrew Brown

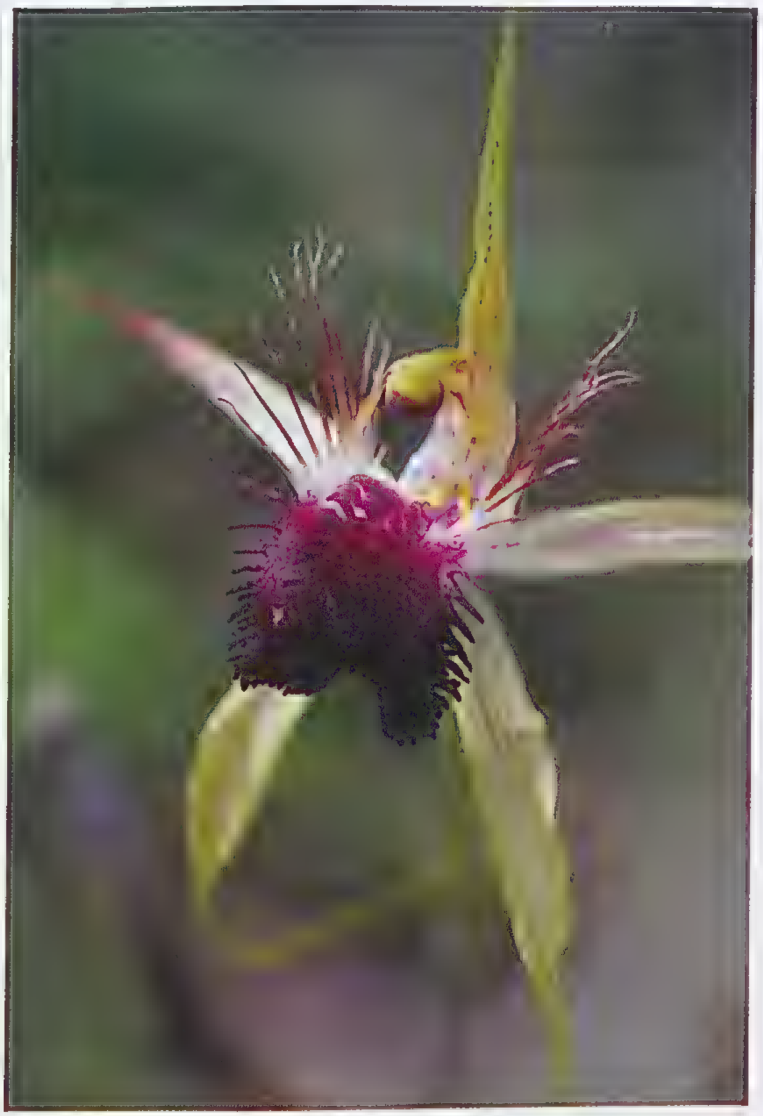
As part of Council's efforts to increase the benefit of ANOS membership, and following the very successful trip to North Queensland in 2015, a tour to southern Western Australia is planned for 2016. The 10 day tour departs from Perth on Sunday 11th September. It will be fully escorted by Andrew Brown, author of *Orchids of Western Australia* and *Field Guide to the Orchids of Western Australia*. The trip is a must for terrestrial orchid enthusiasts, and with Andrew's guidance you may encounter up to 70 terrestrial orchid species (including those pictured here), many rare and endangered. Andrew believes that this is an optimum time to visit Western Australia and there will be countless wildflowers in bloom in this very rich and unique floral province.

The tour will travel from Perth to Katanning, Jerramungup, the Stirling Ranges, Mt Barker, Bridgetown and Margaret River before returning for a final 2 nights in Perth. While the tour will concentrate on bush encounters with orchids there will also be the opportunity for other activities such as a winery visit at Margaret River, and possible excursions to Fremantle, and Kings Park in Perth

Full details of the itinerary including cost can be found online at anos.org.au or by contacting Casino Travel ph. 02 6662 6255 email casinotravel@bigpond.com, Ray Clement (02 6553 1012) or John Zietsch (02 6554 9733). Membership of ANOS Inc. is a requirement of travel, and can be arranged at the time of booking.



Caladenia dorrienii from Western Australia



Caladenia huegelii from Western Australia

see front cover and back cover for photos of orchids from Western Australia

Shows and Events

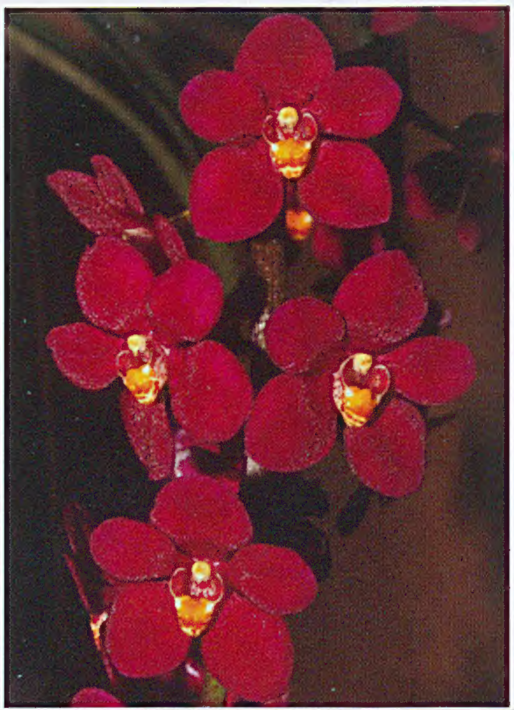
- **Tinonee Open Day**
  Weekend of 9-10 July 2016 768 Tinonee Road, Tinonee 2430. Judging at 9 am Sunday 10th
- **Central Coast Spring Show** 19-21 August 2016 Nara Valley Nursery, 2 Manns Road, Narara 2250 Judging at 8 pm Thursday 18th
- **ANOS Kabi Group Inc. Show**
  Weekend of 27th & 28th August 2016 Tom Petrie room, Strathpine Community Centre, 199 Gympie Road, Strathpine. Parking & entry off Mecklem Street.
- **ANOS Far North Coast Group Show**
  Thursday 25 August to Saturday 27 August 2016 Ballina Fair Shopping Centre, 84 Kerr Street, Ballina, NSW.
- **ANOS Newcastle Spring Show**
  Weekend of 27-28 August 2016 Windale - Gateshead Bowling Club, 2A Lake Street, Windale 2306. Judging at 8.30 am Saturday 27th
- **ANOS Western Australia Inc. Show**
  Weekend of 27-28 August 2016 (from 9am) Cannington Showgrounds Hall
- **8th ANOS Conference & Show Kempsey** in conjunction with **Speciosum Spectacular**
  Friday 2nd September 2016 until Sunday 4th , Kempsey Dirt Bike Trake, Greenhill via Kempsey. Set up Thursday 1st September, Judging at 8.30 am Friday 2nd
- **ANOS Illawarra Spring Show**
  Weekend of 10-11 September 2016 Old Courthouse, Cliff Road, Wollongong 2500 Judging at 7 pm Friday 9th
- **ANOS Warringah Spring Show**
  Weekend of 10-11 September Foresville Memorial Hall - Starkey Street, Forestville 2087 Judging at 8 pm Friday 9th
- **Native Orchid Society of Toowoomba Inc. Show**
  Friday 16 September to Monday 19 September 2016 Saint John's Lutheran Church Hall, 431 Bridge Street (Warrego Highway), Wilsonton, Toowoomba.
- **ANOS Sydney Group Spring Show**
  Weekend of 17-18 September Eden Gardens (Pandorea Room) 301-307 Lane Cove Road, North Ryde 2113 Judging at 9 am Saturday 17th
- **ANOS Melbourne Suburbs Inc. Spring Show**
  Saturday 24th September 2016 Montrose Public Hall, 1B Leith Rd, Montrose VIC 3765 (Melways 52 C7) 10 am – 4 pm (Sales from 9.30 am)
- **ANOS Victoria Inc. Show**
  Weekend of 24-25 September 2016 Mt. Waverley Community Centre, 47 Miller Crescent Mt Waverley 3149 (Melways 70 D1) 9 am – 4 pm each day
- **Central Coast Spring Show**
  Weekend of 8 - 9 October 2016 Narara Valley Nursery, 2 Manns Road, Narara 2250 Judging at 8 am Saturday 8th
- **ANOS Illawarra Spring Show**
  Weekend of 15-16 October 2016 Old Courthouse, Cliff Road, Wollongong 2500. Judging at 7 pm Friday 14th
- **ANOS Sydney Group Sarcochilus Show**
  Saturday 15th October 2016 Community Church, 41-43 Eaton Road, West Pennant Hills. Judging at 9 am Saturday 15th
- **ANOS Newcastle Sarcochilus Show**
  Weekend of 15-16 October 2016 Windale - Gateshead Bowling Club, 2A Lake Street, Windale 2306. Judging at 8.30 am Saturday 15th
- **ANOS Geelong Annual Orchid Show**
  Saturday 5th November, 9am - 4pm, Uniting Church Hall, 100 Yarra Street, Geelong 3220.

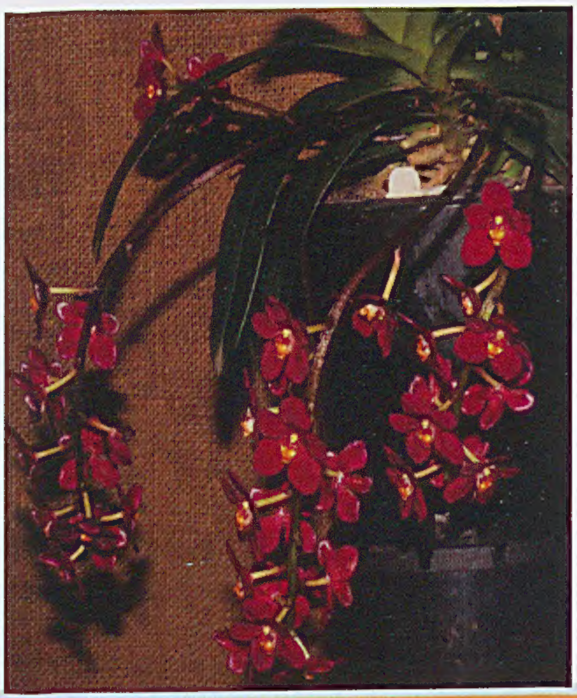
Award

#227 *Sarcochilus* Magic 'Scarloideach' HCC/ANOS 2015 (NSW) 24th Oct 2015

Points: 78.28
Owner: Dowling, Peter
Number of flowers: 39, inflorescences 4

Measurements (mm)		**Average points**	
Flower: across	24	Shape(25)	19.6
vertical	25	Colour(20)	17
Petal	12L 8W	Size(15)	11.3
Sepal	14L 10W	Substance(10)	7.6
Dorsal	13L 11W	Florifer.(15)	11.3
Labellum	6L 6W	Habit(15)	11.2





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- **ANOS Central Coast**; PO Box 3010, Erina NSW 2250 - (02) 4340 5157 2nd Wednesday each month, 8pm. Narara Community Centre, 2 Pandala Rd, Narara 2250
- **ANOS Far North Coast Inc**.: PO Box 399 Ballina NSW 2478 - (02) 6686 6303 3rd Saturday each month (except December and January), 2pm. C.W.A. Room, River Street, Ballina.
- **ANOS Illawarra**: 2 Wilford St, 2 Wilford St, Corrimal NSW 2518 – (02) 4284 8308 2nd Tuesday each month, 7pm. Old Court House, Wollongong.
- **ANOS Macarthur and District**: 43 Strickland Cres., Ashcroft NSW 2168 – (02) 4681 8589 3rd Thursday each month, 8pm. Birriwa Community Hall, Fitzpatrick Rd, Mt Annan.
- **ANOS Mid-North Coast**: 69 The Lakes Way, Forster NSW 2428 - (02) 6554 9733 3rd Sunday each month, 12 noon, followed by BBQ. Contact secretary for location - Taree or Wauchope
- **ANOS Newcastle**: PO Box 4021, Rathmines NSW 2283 – (02) 4975 3729 4th Thursday each month , 7.30pm. Elermore Vale Community Centre, Croudace St, Elermore Vale.
- **ANOS Sydney Inc**.: 9 Alicia St, Glenwood NSW 2768 3rd Friday each month, 8pm. Senior Citizens Hall, B.H. Community Centre, Conie Ave, Baulkham Hills.
- **ANOS Warringah Inc**.: PO Box 421, Forestville NSW 2087 - (02) 9981 2525 3rd Tuesday each month, 8pm. Community Hall, Starkey St, Forestville

QUEENSLAND

- **ANOS Beenleigh Inc**.: PO Box 1130, Beenleigh QLD 4207 - (07) 3805 1973 1st Thursday each month, 7.30pm. Showground Hall, James St, Beenleigh
- **ANOS Kabi Inc**.: PO Box 424, Aspley QLD 4034 - (07) 3359 5752 2nd Tuesday all months except January, 7.30pm. Isabella Griffin Room, Strathpine Community Centre, 199 Gympie Road, Strathpine.
- **ANOS Mackay and District**: 24 Barton St, Mackay, QLD - (07) 4952 2186 2nd Thursday each month, Andergrove Community Centre, Celeber Drive, Andergrove.
- **ANOS Townsville Inc**.: 92 Curie St, Wulguru QLD 4811 - (07) 4778 4311 1st Tuesday monthly (excl. Jan.) 8pm Townsville O.S. Hall, Joe Kirwan Pk, cnr Bamford Lane & Charles St, Townsville
- **Native Orchid Society of Toowoomba Inc**. 106 Umbiram Rd, Wyreema QLD 4352 1st Friday each month, 7.30pm. Lutheran Church Hall, cnr West and Alderley Sts, Toowoomba.

SOUTH AUSTRALIA

- **Native Orchid Society of South Australia Inc**.: PO Box 565 Unley SA 5061 - (08) 8261 1550 4th Tuesday each month, 8pm. St Matthew's Hall, 67 Bridge St, Kensington

VICTORIA

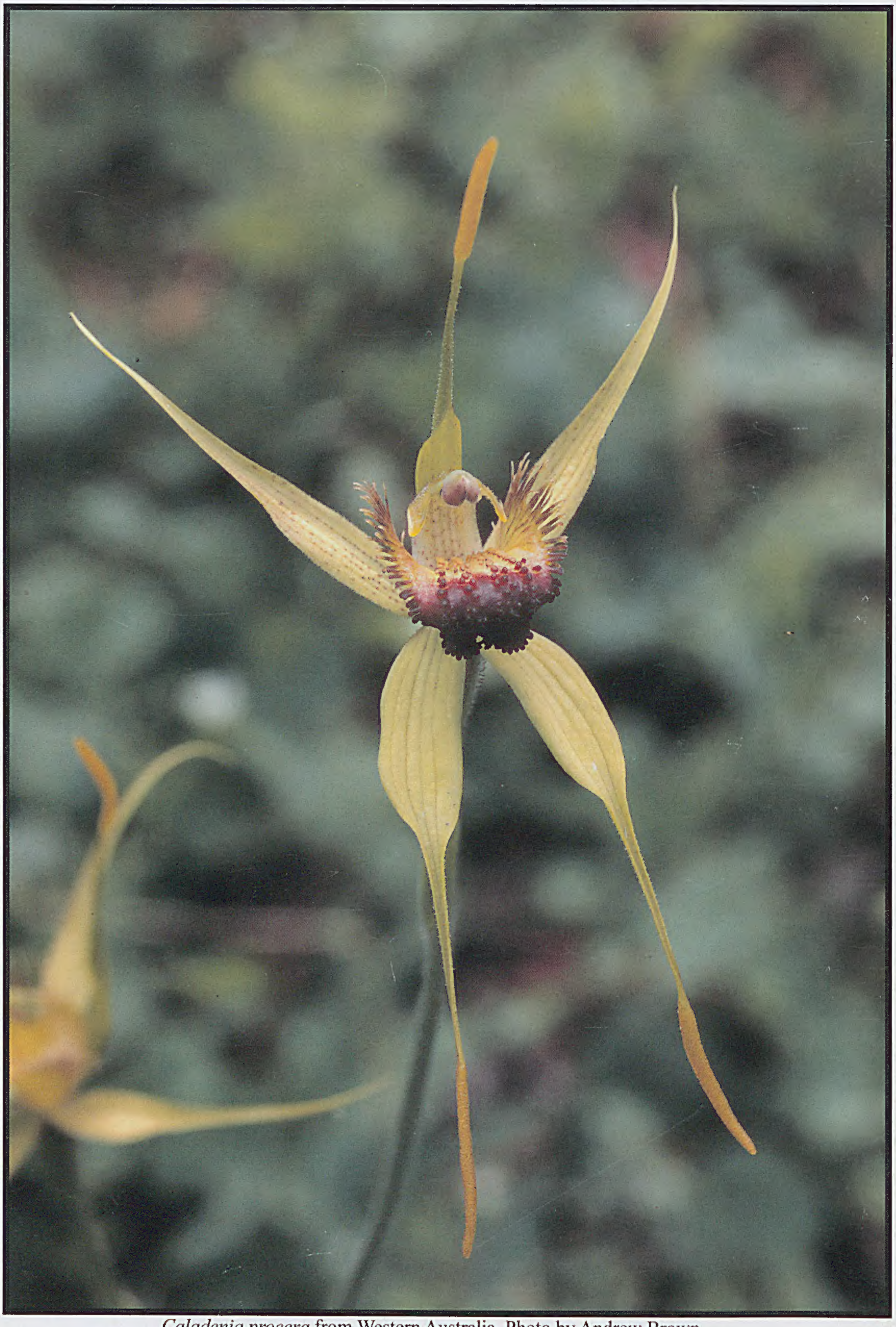
- **ANOS Geelong Inc**.: 2 Cooper St, Melton South VIC 3338 - (03) 9743 6040 2nd Wednesday each month, 7.30pm. Uniting Church Hall, Yarra St, Geelong
- **ANOS Melbourne Suburbs Inc**.: PO Box 169, Bayswater VIC 3153 4th Wednesday each month (excl. Dec. & Jan.), 7.30pm. Montrose Primary School, Leith Rd, Montrose 3765
- **ANOS Victoria Inc**.: PO Box 308, Boronia VIC 3155 - (03) 9387 2771 1st Friday each month, 8pm. Toorak Uniting Church Hall, , 603 Toorak Rd, Toorak

WESTERN AUSTRALIA

- **ANOS Western Australia Inc**.: 27 Maidment Parade, Dalyellup WA 6230 - 04 1990 1335 2nd Monday each month, 8pm. Wilson Community Hall, Braibrise Rd, Wilson

NEW ZEALAND

- **ANOS New Zealand Native Orchid Group** 42 Titiro Moanna Rd, Korokoro, Lower Hutt 5012



Caladenia procera from Western Australia Photo by Andrew Brown